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What's the most important tuning figure, lb/ft or
bhp? Find out in the tech guide of the decade

FAST car

defining car culture

RB DAMNED

*The fire-spitting, 477bhp,
drift-spec S14 with a
Skyline heart!*

25,000bhp Inside

We take a look around the
UK's biggest GT-R tuners

Power Full T5

The UK's loudest audio
van hits 160.1dB

Out There

Huge Scottish
Car Show and
M.I.V.W reports



477bhp forged RB25DET
Water methanol injection
Cosmis XT206R wheels

FAST CARS:

Chevy-powered RX-7 • Supercharged Clio 200 • Twin Turbo'd 350Z • W12-powered Fridolin



#361

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FC

ISSUE 361 NOVEMBER 2015 £4.80



PLUS: Posters, News, Products, Readers' Rides and the Opel Treffen Show

*Thrust horsepower – when brake horsepower just doesn't cut it

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It has been said a thousand times before, but power is addictive and once you've tasted it, you want more. I should know. I'm a long-term sufferer. And so are all the owners of the feature cars in this issue!

From the mental SL4 cover car to the Chevy-powered Rocket Bunny RX-7 on page 26, right through to the totally old skool VW Fridolin that's this month's Wild Card.

There's all types of power too. Naturally aspirated, supercharged, turbocharged and even amplified – as we feature the UK's loudest van, VIBE's T5. Damn it, we've even covered off jet and rocket power too, as we pop into Bloodhound SSC's head quarters to see the 1,000mph Land Speed Record car before it heads off to Africa for the world record attempt next year. More about that on page 70!

We've even had time to settle the age-old debate of what's more important, torque or power. This really is essential pub ammo for any future debates about the subject.

There's more too, as you'll find out when you flick the page and see the contents. I can guarantee you won't be disappointed! Now, where did I put that tuning catalogue?

Big Love,

Jules

RANDOM SHIZZLE FROM TEAM FAST CAR THIS MONTH...



SLIM JULES
EDITOR

"I've always been a fan of twin turbos. Why have one blower when you can have two?"

Fifteen years in publishing including a spell as a pap, IMIAL Level 2 Mechanic, Poppadom Eating World Championship runner up, Race National B Licence holder.
jules.truss@kelseymedia.co.uk



MIDGE
CONTRIBUTING EDITOR

"I uprated the battery on my Nan's mobility scooter once. It was like an early KERS system for OAPs."

Uber-short serial Gumballer and monster truck driver, IMIAL Level 2 Mechanic, built 12 feature cars, five cover cars, five rally cars and has a degree in pottery.
james.burr@kelseymedia.co.uk



INITIAL G
ART EDITOR

"Keep your turbos and superchargers, I'm a fully signed up member of the N/A club. VTEC yo."

Twenty-nine years of design experience (he used to chisel stuff out of stone), champion archer and currently working on proving inflationary cosmology propagation, through vacuum energy.
graham.morecroft@kelseymedia.co.uk



GLENDA
WEBSITE EDITOR

"We need to change these mug shots! I'm more hipster these days. I've got a beard and everything."

Social media guru, Gumballer, IMIAL Level 2 Mechanic, fully qualified lifeguard, purveyor of super lows and very large feet. Also likes cars rather a lot.
glenn.rowswell@kelseymedia.co.uk

THE EXTENDED FC FAMILY:

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Steve McCann Scotty Dawg

Little Nick Freelance Writer

Little Sarah Marketing Maestro

Dan Pullen Camera King

Kevve.be Belgian Snapper

Chris Wallbank Amazing Tog

Damo Hall Super Sub

Jon Davies Show Shooter

Jarkle Writer Extraordinaire

Adam Rayner Audio Guru

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FAST RIDES

NISSAN 200SX 010

With 477bhp kicking out of a transplanted Skyline engine this drift-spec SL4 has no problem losing rear traction!

MAZDA RX-7 026

We love RX-7s here at FC, especially ones with Chevy V8s and Rocket Bunny kits.

CLIO 200 042

Ever seen a practical track car? You have now!

NISSAN 350Z 074

What happens when you hand your 350Z keys to Norris Designs and ask them to make it faster? 650bhp happens!



AUDIO CAR

VW T5 062

This is no ordinary T5; this is VIBE's SPL comp winning T5!



WILD CARD

VW FRIDOLIN 104

With a W12 engine transplant this classic delivery van is now a first class, express delivery van.

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OUT THERE



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We head to Holland's best VW event for men (and woman).



FRESH GEAR

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048 MUCH MORE FRESH KIT

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REGULAR FEATURES

Front End 006

This month we visit the Opel Treffen Show, look at the Honda S2000 and listen to the Angry Man rage about show food!

Pull Out Posters 057

You like cars but do you like posters? If you do it's your lucky day...

Staff Rides 091

It's been a slow month for the FC fleet, with Midge breaking another 1.8T, Jules playing too much Golf and Initial G and Glenda going on holiday.

Readers' Rides 100

Now for the most important cars in the whole world... yours!

PCD Guide 110

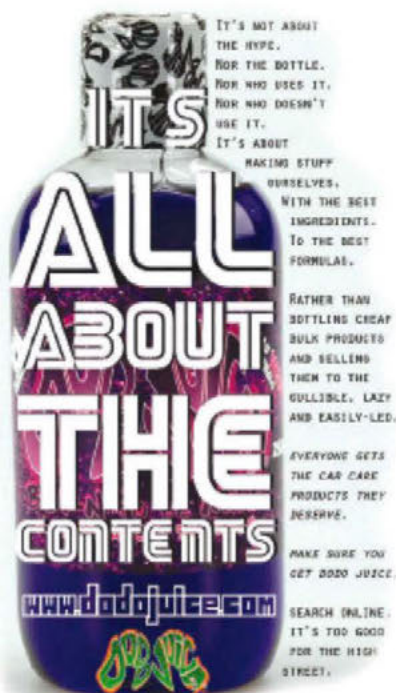
Want to know the PCD of your car without finding a million different answers on the net? It's all here, right in front of your eyes!

Arse End 112

It's been quite a month of mucking about for us. No wonder I'm writing this at 2am the day before we go to press.

Next Month 114

We love girls and we love cars, so this is going to be a good one!



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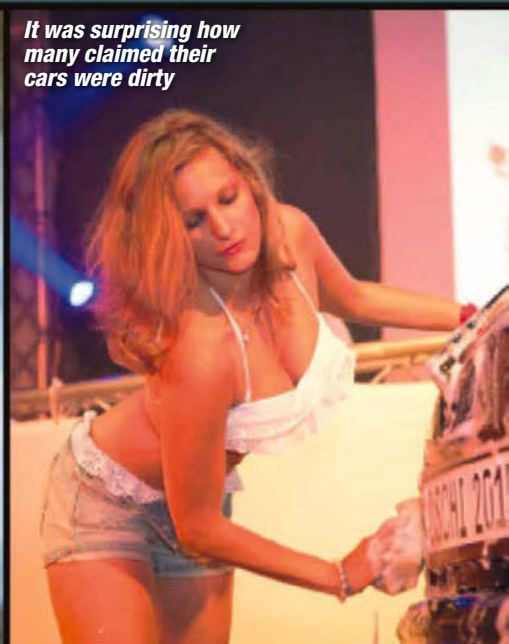


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There's no smoke without tyre



It was surprising how many claimed their cars were dirty



Meet of the Month

WORDS & PHOTOGRAPHY STEVE MCCANN

Opel Treffen 2015

The Motorsport Arena Oschersleben in the heart of Germany may seem like a long way to travel for a show, but not when it's for the Opel Treffen. This is where 70,000 Vauxhall/Opel fans from all over Europe make a pilgrimage with 20,000 cars to have an enormous party. Officially, the event lasts from Wednesday until Sunday, but many arrive even earlier. The idea is to camp

somewhere around the circuit and from then on just enjoy the bedlam on and off track. The circuit is used continuously for open track sessions, demos, quarter-mile drag racing, drifting and a separate dedicated burn-out area. There are also endless club stands, a massive show and shine competition, sound-offs, retro displays and even Opel contribute hugely with an enormous marquee and display. When the sun

goes down the madness continues well into the small hours with a giant packed entertainment tent that hosts live music, DJs and the popular Miss Opel contest.

The event is more like a festival than a car show, but with no hint of trouble as the atmosphere is amazing. There's nothing like this in the UK, so you simply have to make the trip in 2016 and learn how to party from the Germans like the Germans.



We say Nova they say Corsa A





Party buses

A unique feature of the show is people building crazy cars that are used only for driving around the perimeter of the circuit. The common theme is to extend the vehicle, add wheels, chop the roof, build in extra seats and drive your mates around while they drink beer and make plenty of noise. Some of these things were outrageous and unlikely to pass any TUV tests!



It's 2002 again...



Old skool drool

German styling

The Germans sure know how to treat a retro car. Most were modified perfectly with clean looks. But, when it comes to the more modern metal they have a very different taste compared to UK flavours. We're talking crazy bodywork, airbrushing, pin-striping, Lambo doors and wild paint... sometimes all on the same car. It may not be to the UK's style, but within a lot of these cars are some strokes of genius and amazing workmanship.



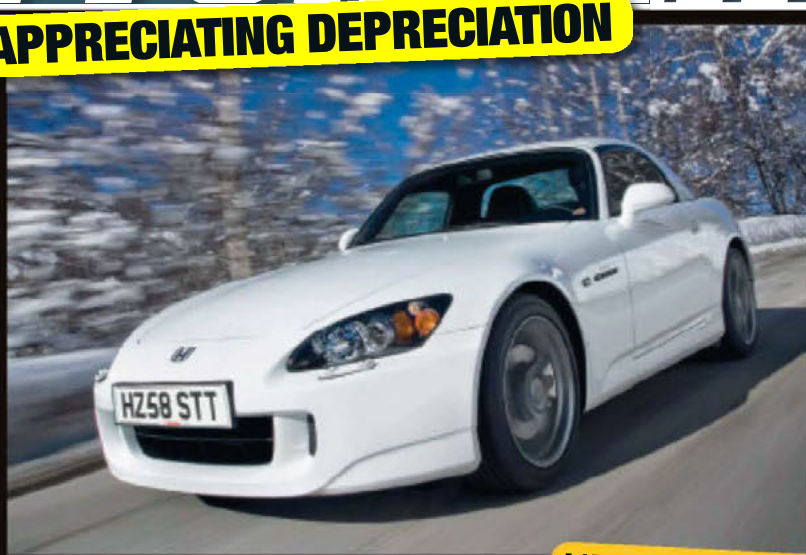
If only they sold Vauxhalls



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APPRECIATING DEPRECIATION



HONDA S2000 NEW £28,000
NOW £4,500

What's Japanese, rear-wheel drive and under 5k? Well, quite a few motors actually, but this one has 240bhp of screaming VTEC. Which means we are looking at Honda's extremely capable S2000.

Launched back in 1999 with a 2.0-litre naturally aspirated engine, the S2000 was Honda's answer to the popular Porsche Boxster. Its numbers certainly added up, being more powerful and quicker to 60mph (6.2 seconds) than the German drop top (until they launched the S anyway). They also came with gorgeous interiors and a funky digital dash!

The S2000 has had more facelifts than Joan Rivers, so prices vary depending on this. The price quoted here will get you a 100,000-mile early model, although we have seen them as

cheap as £3,500, but that's normally for a car that's seen more miles than a Boeing 747.

Early Facelifts were launched in 2002 and 2004. Both saw suspension revisions, but the '04 cars got bigger wheels, new front and rear bumpers, plus revised headlights and rear clusters. These start at around £8,000, but that's cheap compared to the ultra rare Edition 100, which was the last of the S2000s to be launched in the UK with a limited run of 100 (you probably guessed that!). All came in Grand Prix white with contrasting red leather.

We'd stick with cheaper pre-facelift models though and then get modifying. They are very well catered for in the aftermarket scene and react well to cosmetic, suspension and engine tweaking. Spoon hardtop anyone?



"I LOVE GOING TO CAR SHOWS BUT ONE THING ABOUT THEM REALLY GETS MY GOAT? THE OVERPRICED, TASTELESS, CARDBOARD TEXTURED FOOD!"

If you're at a car show, the likelihood is you're going to be there for the day and that means eating there. Eating is supposed to be enjoyable, but forget that if you're at an event in the UK.

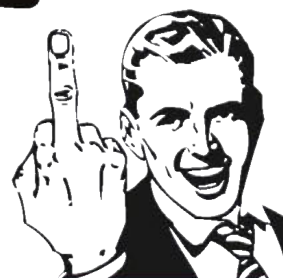
A 100-percent cow tongue and spinal cord burger served with a stale bun will cost the best part of a fiver. Want cheese? No problem. That's an extra couple of quid. Salad? Don't be stupid. If you want taste you're going to have to smother it in sauce... if there's any left. Don't get me started on the mayo, which looks like it has come out of a tramp's testicles!

So you're finally got the burger after a 45-minute queue. But you'll need something to wash it down with, if only to stop you choking on the dried-out bun. A bottle of non-branded 'mineral' water will be cheap? Indeed, it's a bargain at £2! A 50p 'not to be sold separately' can of Coca Cola is going to be subjected to a 500-percent price rise too... and guess what? It won't even be f*cking cold!

So you walk away feeling like you've been robbed, but at least you can sit down and enjoy your lunch. Well of course you bloody can't, because there's no effing seats, let alone tables, to rest your arse and tired feet!

I don't know about you readers, but I'm taking a packed lunch next time!

The Angry Man



Disclaimer: The opinions expressed herein are not necessarily those of Fast Car or the publisher. So fuck you :)

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True Grit

IF AT FIRST YOU DON'T SUCCEED...





I don't know about you, but I've been around the block more than a couple of times. So with that in mind, I can safely say that Boyden Barlow's 200SX has to be one of the quickest cover cars we've ever seen in FC... in more ways than one.

For a start, this competition-spec drifter obviously gets down the road a bit lively – and I'm not just assuming that because of its distinctively hardcore looks. Nope, any eagle-eyed Nissan nut will immediately spot the Skyline 6-pot sitting under the bonnet and this particular fully-forged lump is pushing a more than useable 477bhp straight to that super-wide, grip-friendly rubber. Suffice to say, in a stripped-out track motor that weighs about as much as a gnat's scrotum, that makes it shift faster than a nun's first vinaloo.

Now, even though it's a popular and well-established conversion, an entire S14/RB25 engine swap isn't the easiest mod to pull off, and it's just as apparent from looking at the rest of the car that it's taken a huge amount of work to get to this sort of level. After all, it wouldn't be in here otherwise.

Everything from the fully gusseted roll cage, gargantuan overfenders and monster rear wing, right down to smaller, no-nonsense touches like the 300ZX brakes and canards clearly hasn't been a task for the faint hearted. There's also plenty of other hidden gems like

tubbed rear quarters, a bonkers tubular front end and the finest BC Racing ER Series coilovers that money can buy. So perhaps the most surprising thing about this car is that Boyden, along with a few of his mates, put it together, largely at home, in a little over five months.

I have to admit, my first thought was that Boyden and every one of his friends must be professional mechanics, but I was wrong. He's a floor layer by trade, so I'm guessing he's pretty bloody good at it, not least because this motor must have cost a fair whack just for the collection of high-end parts. Come to think of it, running the bugger probably requires some seriously deep pockets too.

My second thought was also wrong (you're doing well today eh? – Jules). With such a massive undertaking in a ridiculously short timescale I reasoned that it must have been pretty plain sailing all the way through. But again, nothing can be further from the truth. There's actually been three engines, two shells and a whole load of trouble in between.

According to Boyden the idea was always to create a monster to compete in the Drift Cup and on to the BDC so there were plenty of rules and regulations that needed to be carefully considered. As you can see the finished article follows all of these strict

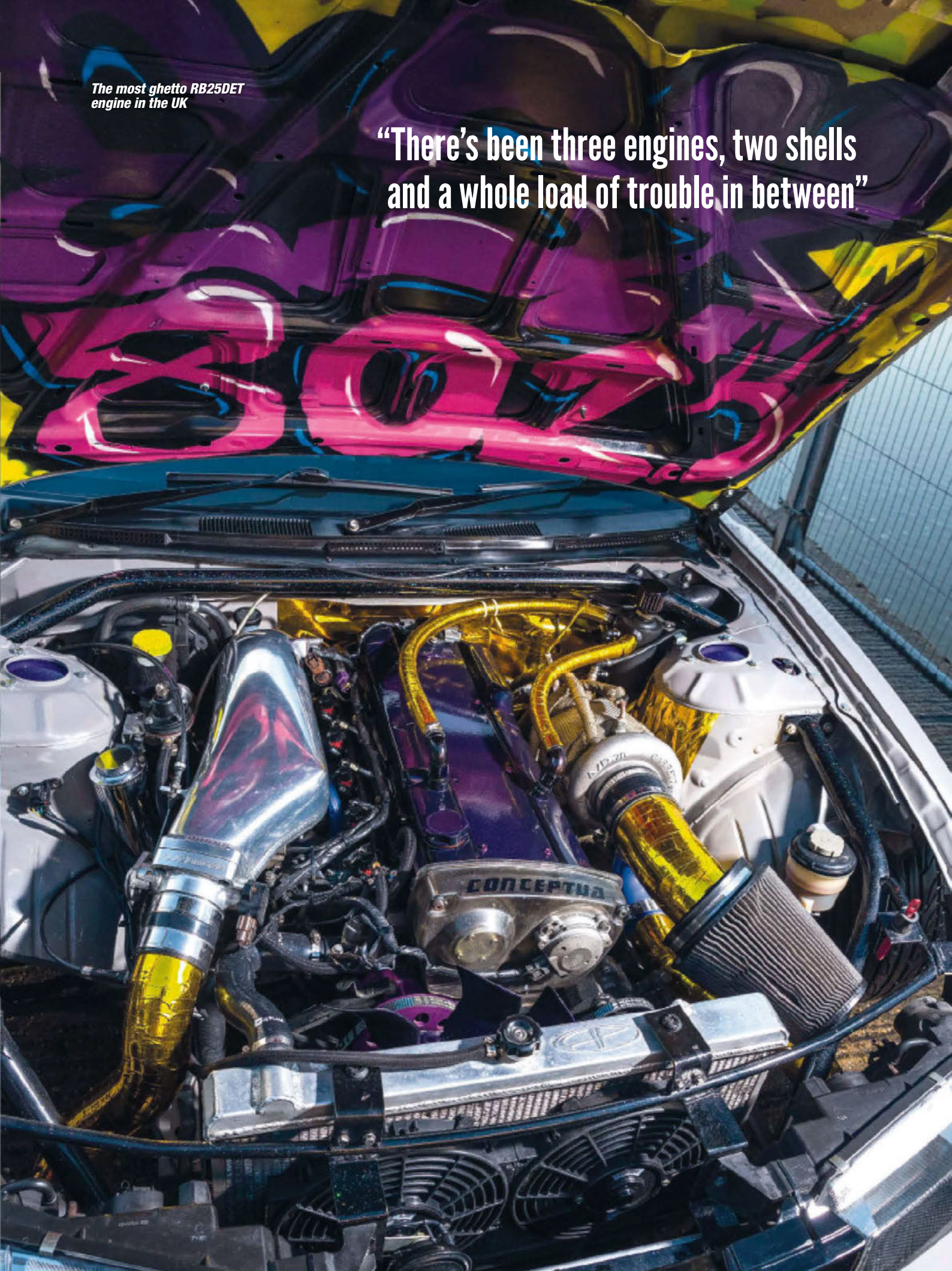


9.5x18in Cosmis XT206R rims sit under the front fenders



The most ghetto RB25DET
engine in the UK

“There’s been three engines, two shells
and a whole load of trouble in between”



HOT RIDE: NISSAN 200SX



Now that's what you
call a roll cage

Don't hate the player...

"Opting for a brand new,
fully forged job with
a huge turbo"



BOYDEN BARLOW

So, let's get this straight, you bought the original car in the dark?

"Yeah, yeah, I know. We've all done it before though right?"

Nah man, I've seen Mike Brewer on the telly.

"What about that Skyline you bought on the side of the M4 at night, in the rain?"

Who told you that?

"Jules. He said it was a proper shitter too."

Ah yeah, that one. Okay, you got me there.

A dignified exit isn't possible



Opposite lock



requirements to the letter but that's not to say there wasn't a few more basic rules broken in the beginning - how about the classic 'don't buy a car in the dark' for starters? In fact, that's what kicked off the whole story.

Now, to say the first S14 Boyden bought for his drift project was rotten is something of an understatement. With a floor pan you could literally spit, through he admits it wasn't exactly his finest ever purchase, especially for someone who's owned loads of 200s over the years and knows these cars inside out.

Still, maybe subliminally at least, the rusty bodywork wasn't his first priority because this rolling wreck was already sporting a rather tasty RB25 conversion, so he could always use the engine and ancillaries for an impeccable re-shell job, right? Unfortunately, as it turns out, he couldn't.

You see, that may have been the original plan, but a few practice days, some serious sideways antics and Boyden's heavy right foot soon put a stop to that particular strategy. After sorting a new base by bagging himself

a super-clean import shell from Garage-D and setting his mate Charlie loose with the welder for all those unbelievably awesome, hand-crafted custom bits, Boyden decided to give his donor a good thrashing in the meantime. You can probably guess what's coming next - he ended up blowing the engine to bits. So, essentially, the whole of this first S14 ended up in the bin.

What Boyden had learned from Nissan number one was an invaluable part of the final outcome though. With the ins and outs of the RB25 swap now studied and well within his grasp, all he needed was another Skyline lump and the rest would be easy. But, again, real life has a habit of not working like that.

The trouble with buying any engine is it can be a minefield, even when you're spending serious wedge. By all accounts he did the right thing, opting for a brand new, fully forged job with a huge turbo and suitably tricked-out HKS ECU. With just shy of six grand on the table no one was expecting bent valves and duff electronics right out of the box, least of all





Boyden. I'd imagine installing that lot and immediately having to rip it out again wasn't exactly the highlight of his summer. Shelling out for a full strip-down and rebuild from the boys at JDM garage can't have been either.

At this point most of us would have chuckled in the towel, but still Boyden was undeterred. While his new forged engine was off being put together he bought and installed another standard RB lump just for shits, giggles and getting the S14 out and about. It only took him a few weeks to kill that one too.

Anyway, there's one bastard of an awesome motor sitting here now, so clearly the story has a happy ending. By the time Boyden got his new lump back he'd not only furnished the rest of his car with a killer spec including a business-like interior, comprehensive drift-spec chassis and a full respray, but he'd got his engine installation time down to just a couple of hours. All that practise must have come in handy.

You've just got to admire the optimism and motivation throughout the whole thing. Knackered engines and rusty panels weren't the only problems either. But admirably, and no doubt through gritted teeth, he never gave

up. Not even when the guy doing the sandblasting dropped the fucker on its roof, causing even more headaches.

The thing about persistence though is it can pay off and, to me, nothing proves the power of 'just getting on with it' more than seeing this car on the street.

I suppose the real kicker is, from just looking at this crazy SX in front of us, you'd never suspect half of what was involved in just getting it finished, let alone finished to this high standard.

With most things in life it's the end result that's important. But, as extensively spec'd and high performing as this motor is, for me the way it's been achieved is just as, if not more, inspirational. It's truly remarkable how fast Boyden got there. But perhaps what's most amazing is that he got there at all. True grit, indeed! 🍀

TUNING:

Forged RB25DET engine; Garrett GT3076R turbo; Plazmaman plenum and 90mm throttle body; HKS 750cc injectors; solid lifters; tubular manifold; 44mm Turbosmart external wastegate; HKS Fcon Pro 2 ecu; lightweight pulleys; EMP Performance custom straight through exhaust; AEM water methanol injection; custom 55mm rad and intercooler; EMP performance intercooler pipe work; Splitfire coil packs; Exedy clutch; lightweight flywheel.

CHASSIS:

9.5 and 11x18in Cosmis XT206R wheels; BC Racing coilovers ER Series with external reservoirs; Wisefab front lock kit; Japspeed rear control arms; Whiteline anti roll bar; 300ZX front discs and callipers; GKTech twin rear callipers using 4x 300ZX callipers; Willwood hydraulic handbrake; braided lines throughout.

STYLING:

Resprayed in gloss grey inside, outside and underneath; tubbed rear quarters with 50mm fibreglass over fenders; S14A front end; 30mm fibreglass front wings; tube frame front end; standard bumpers modified to fit custom front splitter and canards; one off wing using a Big Country Labs blade.

INTERIOR:

Custom Cages roll cage; Corbeau Pro-Series seats; TRS harnesses; limited edition Personal steering wheels; Driftworks handbrake lever; flocked dash with custom centre section housing six gauges, switches and water methanol controller; Varley race battery.

THANKS

The lads at Torque Developments; Charlie Knowles at Essex Off Road; Barney Clark at B Clark Body Repair; Dave and Eldin at EMP Performance; Julien and Dara at Garage D; special thanks to the lads that put in a lot of late nights and kept me motivated, Scott, Joey, Ricki, Andy, Chris and Richard.



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Mini Cooper	£357.38	£330.90	-	£357.76
Mitsubishi Evo VII/VIII	£450.89	£467.71	-	-
Nissan 350Z	£898.51	£449.10	-	-
Renault Clio 182	£408.84	£369.00	-	£445.12
Renault Clio 197	£480.28	£427.50	-	£445.84
Seat Leon Cupra R	£415.14	£370.50	£370.50	£400.40
Subaru Impreza WRX/STI	£393.25	£415.14	£370.50	£400.40
Vauxhall Corsa VXR	£453.38	£380.70	£487.90	£556.40
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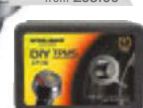
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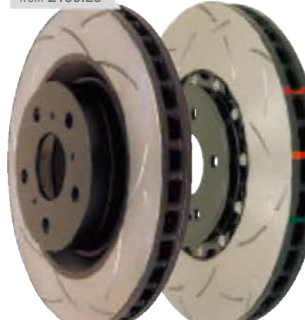
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Scottish Car Show

SCS RAISES THE BAR ONCE AGAIN WITH ANOTHER FINE DISPLAY OF MODIFIED METAL AT THE ROYAL HIGHLAND CENTRE

Things ain't what they used to be in the car scene. How many times have we heard this – even since way back into the 90s? It's often said in a negative way, but if you take a step back there's a hell of a lot changed for the better. For example, the quality of some cars currently in the UK couldn't even be dreamed of back in the good old days.

To demonstrate this you only had to look at the Scottish Car Show this year. It was

the best ever in terms of the metal on show. The variety here is always impressive as the event brings together retro, modified, performance, supercars, hot rods, racecars, trucks and even one enormous tractor! The layout is both indoor and outdoor, with club stands everywhere, which creates a great atmosphere. A live stage indoors kept people entertained while the outdoor action arena played host to BDC drifters Mark Luney and Steve Donnelly, who smoked

their way through countless tyres. The time just flies by and before you know it the trophies are being handed out and everyone is heading home.

There's no doubt this is still the biggest and best event in Scotland and well worth a visit if you fancy a wee holiday in Edinburgh. We are looking forward to seeing if the bar can be raised even higher next year! Anyway that's enough from me, roll the pictures...



You just can't help but love a Trueno



TOP CARS

We had some truly spectacular cars that you just don't usually see. Like Top Secret's 240mph Gold R35 GT-R now belonging to Lewis Petrie. A Route KS kitted wide-body NSX. A full-on Ultima GT car and stacks more. But, it wasn't all about balls-out big-buck cars as the extensive home builds of Shaun Quinn's outrageous Civic, Stefan Storie's stunning Mk2 Golf and Martin Oberheim's mean V8 S15 rightly grabbed loads of attention too. Don't take our word for it though, just check out the photos!



If we could turn back time, we'd buy an NSX



Top Secret's R35 is now owned by Lewis Petrie



Shaun Quinn's amazing Civic



That's definitely not an SR20...

SHOW: SCOTTISH CAR SHOW 2015



CLUB CLASS

As well as the car quality being high, the club stands followed suit. As always, Monster Unit put on quite a show with countless sick cars in a great display that included a merchandise stall, hot PR girls, a good atmosphere and the biggest tractor in the world, as you do. Keep-It-Clean also impressed with a nice set-up that saw Greg Robins' cool CRZ and Darren Pirie's outstanding Golf on display. However, coming out on top with amazing modified metal on show was Lomotion. Their array included Shaun Quinn's incredible EK Civic, Ally Boyd's Corsa, Ross McElwee's Corsa, Andy Alexander's Clio and Scott Lennon's Civic – all past and future FC feature cars! Well done lads and ladies!



Greg Robins' CRZ reppin' the Keep-It-Clean stand





A beast of a Cossie-powered Fiesta



Evil looking Fiesta



Vee-BUG



SHOW: SCOTTISH CAR SHOW 2015



JM IMPORTS

Jurgen Vallons is the man behind JM Imports and they specialise in JDM cars. They can source, sell and tune anything Japanese and he was kind enough to organise a few cars for the show. He brought his own awesome R35 GT-R, as well as another two big power GT-Rs, the KS kitted NSX plus a VeilSide Fortune RX-7. JM even helped with the import of the Top Secret Gold GT-R, also at the show. In total there was over 4,000bhp between the cars Jurgen arranged. What a line up!



Jurgen Vallons' mega-power GT-R

We're loving the Ferrari wheels on this 'Rocco, but also the colour-coded callipers and seats



When in Scotland...



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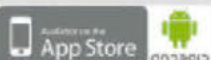
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AMERICAN NINJA

***A PROPER STREET WARRIOR STRAIGHT FROM THE FAR EAST...
WELL, THE FAR EAST COAST***



As a true car nut you'll already know that the fusion of Japanese tech and all-American muscle isn't always an easy pill to swallow. A certain Skyline RB26 conversion in a Mustang Fastback followed by a spot of drifting down a Japanese mountain road immediately springs to mind. And that's the whole problem.

Now, you might think that decking out a single motor with concepts from both sides

of the Pacific is an idea that simply can't work in the modified car world. But that's only because here in Europe we've been subliminally trained to think that way.

It's little more than the power of suggestion imposed by the movies. In reality all this POS is actually a load of BS. Hollywood may have us believe that you can either be a Vin Diesel or a Paul Walker. A muscle car or an import guy. And that the two can never mix – but thankfully real life doesn't quite work like that.

Chris Ballard's RX-7 is living proof that a J-USDM combination can be, not just right, but absolutely righteous. On the face of it his FD coupe appears to be as quintessentially Japanese (not to mention, as bonkers) as a wasabi enema. And it's true that it wouldn't look out of place on any Tokyo backstreet as some sort of Yakuza mobster's wet dream. But perhaps the most interesting thing is, it's been put together, from the very start, in a way that could only have been done in the US.





You see, Hollywood lies. But Discovery doesn't. And if the Discovery Channel has taught us anything over the years it's that every bloke in the States likes nothing more than getting stuck into a 'junker' and creating a work of awesome power and presence. It's as ingrained in society as eating Thanksgiving turkey or shooting anyone who disses yo moma. And rightly so.

My point is, I'd love to say that I'm totally surprised Chris took on what was essentially a wrecked FD that had been sitting on stands rotting away on someone's drive for three years. I'd like to declare it a total shock that he chose a base car where half the parts were missing and the demolished Wankel power plant was capable of doing literally that – wank all. But the truth is, Chris is an American, and an automotive collage graduate at that. So we shouldn't really be surprised at all. It's almost as if this car was destined to be a reality. An international experiment that just couldn't fail.

That's not to say, just because this motor couldn't (or wouldn't) have been built in Japan, it doesn't follow a thoroughly Japanese attitude. It's exactly as nuts as anything else you'd expect from a nation that invented the Popsy sperm drink and Takeshi's Castle. I mean, who the hell puts imported 11-inch wide wheels with 265 rubber on their motor for a start? And here they're on the bloody front!

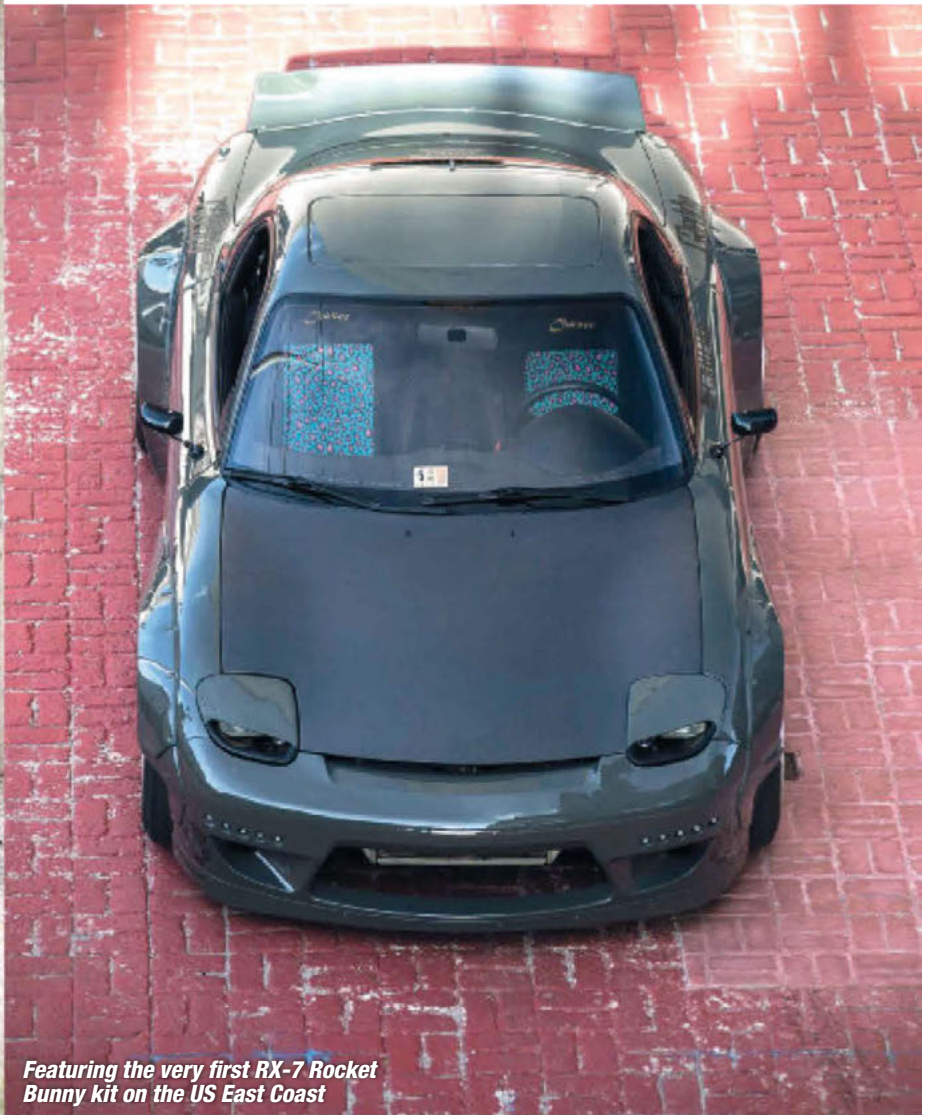
This one also features the very first RX-7 Rocket Bunny kit on the East Coast of the

USA. Designed in conjunction with drifting legend Mad Mike, it's not exactly what you'd call restrained is it? Come to think of it neither are those Stage Six Motoring seats.

Set-up on some super-sexy ZEAL coilovers, Chris's Rex goes round corners like a thoroughbred Jap car too. But despite all these Far Eastern innovations the American influence is not just apparent, it's quite literally the heart of the build. Of Course, almost inevitably, that means there's a massive V8 under the hood.



*Some curves
worth flaunting*



*Featuring the very first RX-7 Rocket
Bunny kit on the US East Coast*

V8? Check





The 5.3-litre Chevy L33 Chris has crammed-into the bay is an absolute monster. But a monster that's reliable, bulletproof and perfect for a daily driver. Over here we know it as a derivative of the lump in the Corvette and, er, that's about it... although us Brits do always have a little chuckle when our American cousins call it a 'small' block.

What I didn't know, chiefly because I'm English, is they only used this L33 in long wheelbase, 4WD trucks like the Chevy Silverado between 2005 and 2007, and it puts out over 330bhp as standard. It also has a lightweight aluminium block making it ideal for keeping the weight distribution near-stock when installed in a relatively small Japanese car, say a third generation RX-7. I'm sure you'll forgive my ignorance though. There's a reason we don't tend to know a whole lot about these engines here in the UK. We call him the Chancellor of the Exchequer. The Americas don't have the thoroughly British belief in stupidly priced petrol though, at the equivalent of 70-pence a litre you can afford to drink a little more, and that makes V8 lumps like this a national institution.

In any case, I'm pretty sure there's nowhere else you'd find a truck engine more ideal for a modified car – try whacking the lump out of a Navara in your Focus and coming up with something like this mad bastard. Good luck with that one.

Apart from the big, fat V8 combined with a Camaro 'tranny' (yes, we laugh childishly at that too), a Ford Racing diff and a truck-load of bolt-on tuning parts, there's also a clear old-skool custom influence shining through. Chris built up the WEDS wheels himself and chose to adorn them with an awesome homebrew 'lace-paint' job – a touch you certainly won't see in Japan, or over here for that matter.

There are other tweaks that put this car on another level of sophistication too. The Ferrari

paint, expertly applied by Forbes Auto Body in Chris's home town of Fredericksburg, Virginia. The matt carbon bonnet from Seibon. The Hot Water Labs headlights give a touch of class that's rare in any well-seasoned street warrior. It just feels so much more elegant than anything else on the streets of either continent. Equally as loopy, but still elegant.

The interior too has an air of simplicity that wouldn't be out of place on a Japanese racer, but done with a plushness and practicality that's much more akin to the Western world.



Plushness meets practicality

Now there's a numberplate
with a sense of humour

CHRIS BALLARD

What made you choose an RX-7 in the first place, Chris?

"I bought this one because I got a ridiculous deal."

Just how good was this deal then?

"Let's just say it was less than an Oriental rug and more than a box of Twinkies... although it probably wasn't even worth the latter."

So are there any other Jap/US collaborations you're working on?

"Well, if I could just get this sushi burger thing down..."

Erm, they already have those in Australia.

"Get out of town!"

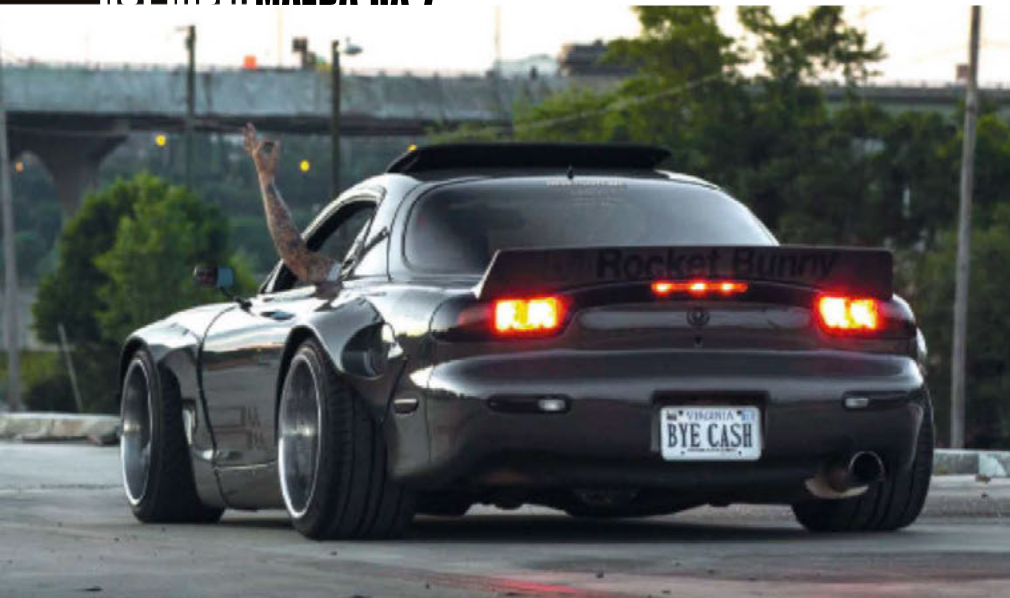
Nah, true story, Bro.




Lace painting

As you've probably guessed, in its simplest form, lace painting is blowing over a surface while using a piece of patterned lace as a paint mask. It's pretty straightforward. Just spray away, yank off the lace and - shazam - there's the pattern right there in the paint - even Derren Brown couldn't pull that feat of illusion off.

It's an old skool custom technique that's been used since the late 60s and while it's not for everyone, it can look stunning on the right retro motor. Go and grab your mum's net curtains and have a bash yourself... (just don't tell her we told you to).



What Chris has achieved is a successful coalition of American muscle and Japanese technology in a way that enhances what both nations do best. It has all the power of a drag-strip-thumping V8 brazenly screaming 'there's no replacement for displacement', but with a chassis that will handle the twisty stuff like it was designed to all those years ago. There's the craziness of Tsukuba and the 'rubbin's racing' blue-collar grunt of Daytona all wrapped up in one motor.

If they'd made Days of Thunder: Toyko Drift, this streamlined butterfly would have been the star. And we'd all have actually believed it. 



TUNING:

2005 aluminium block 5.3 L33; 799 heads; LS1 intake manifold; LS7 mass air flow sensor; Spectre LS7 maf adapter; PSI Conversion engine harness kit; 58lb injectors; billet fuel rails; Hinson LS-swap subframe; 1 7/8in mid length headers and conversion driveshaft; Ronin speed works c5 pedestals; Ronnie Wine Fabrications trans crossmember and dual 3in to single 3in mandrel bent exhaust; HP tuners mapped/tuned ECU; Ronin speed works 8.8 swap kit; Ford Racing 8.8; 3.73 gear; Peter Farrell super cars 3in axle back.

CHASSIS:

11 and 12.5x18-inch WEDS Bazreia wheels with lace faces; 265/35x18 and 305/30x18 tyres; ZEAL Function X coilovers imported by Japan Parts Service; Hinson bump steer correction kit.

EXTERIOR:

TRA Kyoto Rocket Bunny kit, Seibon matt carbon bonnet, Hot Water Labs headlights, APR carbon GT mirrors, windows by East Coast Window Tint; Ferrari Grigio Scuro paint by Forbes Auto Body.

INTERIOR:

Stage Six Motoring Chaser seats; Nardi leather/chrome steering wheel; MOMO steering boss.

THANKS

My best buddy Glen Cornell for all his help; Forbes Auto Body; Ronnie Wine Fabrications; Japan Parts Service; not forgetting anyone else who helped, no matter how little.





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StavTech

Power Vs Torque

POWER AND TORQUE ARE WORDS WE'VE ALL HEARD OF, BUT DO YOU REALLY UNDERSTAND WHAT'S BEST? WELL, WE'RE HERE TO GIVE YOU THE FULL LOWDOWN...

So what are power and torque? We all know they make our cars faster and therefore we want more. But explaining exactly what power and torque is, is complicated, boring and actually not that relevant to making a fast car.

That said, having more of both is a very good thing to have, and the higher the numbers of each, the more overall performance your car's engine has. However, things aren't quite as straightforward as that. But that's what we're here to explain.

First up though, let's turn the complicated science of power and torque, in to something basic that hopefully we all can understand...

Torque is the amount of turning force an engine has in one revolution

Power is the speed an engine can move a certain weight, over a certain distance

Due to a huge number of factors which we won't get in to but can be classed as 'volumetric efficiency', the rpm where torque is the greatest varies depending on engine spec. And where power is the greatest varies too, as peak power is the point where the engine is spinning the fastest while still producing good torque.

What this means is power is simply a combination of torque and rpm. Your engine has a certain amount of turning force (ie torque) per revolution, and it can turn with that force a certain amount of times per minute, and that's called power.

If you care (and you probably don't as there's countless calculators online to do it for you), the equation to calculate BHP from torque and rpm is: Torque (lb/ft)

multiplied by Speed (rpm) divided by 5252 = POWERRRRR.

This is why cars with lots of torque at low rpm have good low down performance. But also cars with fairly low torque but the ability to rev very high feel similarly fast, but at the opposite end of the rev range. Simple, right?





Units of measurement BHP, lb/ft, nm, PS, KW

Traditionally brake horse power or BHP is the unit of measurement we use in this country for power, and lb/ft the one we use for torque. But thanks to our German friends, PS or Pferdestärke is often seen, and Kilowatts or KW, is often seen on tuned cars in Australia. Newton Meters or NM, is often seen as measurement of torque in many other countries too. But how do these

measurements compare to the BHP and lb/ft that we know and love?

Well Pferdestärke is German for horsepower, and the figure is almost the same as BHP – but not quite, just under 99 percent in fact. So 100bhp is just over 101ps, for example.

Kilowatts, or KW, on the other hand is very different from BHP, about a third lower in fact. So if a car has a high KW number, it's

REALLY powerful in BHP terms, with 100bhp being just under 75KW.

Newton Meters or NM, gives higher numbers than lb/ft, with just over 1.3NM for every 1 lb/ft. Which doesn't sound much different, but while 800nm of torque sounds like an insanely high number, in reality it's a slightly more sane sounding 590lb/ft when converted into the terms we know and love.



Flywheel power, wheels power, hub power, crank power...

The vast majority of rolling road figures in the UK are those numbers measured at the flywheel. However, that's not the only place power is measured, and the place where it's measured has a big effect on what number any given engine will show as producing.

As mentioned, flywheel power is the most common measurement used in the UK, but is actually the only one never truly measured. In fact it's calculated from the wheel figures when using a rolling road. There's a lot of debate on the accuracy of flywheel figures, and that's the reason some countries, particularly the USA and Australia, rarely use them on tuned cars. But they are the most common number seen in this country.

Power at the crank is almost an identical figure to flywheel power, but is totally accurate as it's measured directly from the engine before it's installed, by using an engine dyno. This is the figure quoted on standard production cars, and many highly tuned cars also see the engine dyno before installed.

The least common figure is power at the hubs, which is measured, unsurprisingly, by a hub dyno. Hub dynos literally bolt to the car's hub instead of the wheels, and are used as this eliminates wheelspin problems that are common on powerful cars on conventional dynos. Hub power figures are lower than crank and flywheel figures, but a little higher than wheel figures.

Last, and least, is wheel power. This is the number usually quoted in the USA, and often considered the only true power of a car, as it's your wheels that are the only part in contact with the ground.

Somewhat surprisingly, it's ignored in the UK. Though that's probably because it's by far the lowest, so least impressive sounding, number. As cars lose a significant amount of power through the gearbox, diff and other transmission parts, wheel power tends to be 10 to 25-percent less than power at the flywheel/crank.

So you should always remember to take that in to account when comparing US wheel horsepower figures to UK flywheel figures!

So what makes me fast? Power or torque?

Despite many, especially V6 and diesel owners, parroting the legendary Carroll Shelby's famous quote: "Horsepower sells cars, torque wins races", it simply isn't true. In fact power is almost always the number one requirement.

For example, the Formula 1 V8 engines of the recent past had barely 220lb/ft of torque whereas a standard Mk5 Golf TDI has nearly 260lb/ft, but will a Golf TDI win a race against a F1 car or a Ferrari? Hell no. It will get obliterated. In fact, will it win a race versus a Honda S2000 that's got around 100lb/ft of torque less than the Golf? No chance. So basically, no, torque doesn't win races, power does.

But one thing you should never, ever, everrrrrrr forget, is that torque is still massively important.

If there are two cars, both with the same power but one with far more torque, the torque filled one will be faster, especially on twistier roads and tracks. In fact, if one car has a little more power, but much less torque, the torquey car will generally be faster.

The importance of torque depends on the use of the car too. Flat-out racing where



you're constantly at high rpm means torque as most of us know it (ie low-down grunt) isn't as important. But in situations where you aren't always at high rpm, be it due to racing

on twisty tracks or simply on a road car, big torque makes for a much, much faster car.

And this leads us neatly on to the most important point of this feature...



It's **ALL** about the powerband

Peak numbers might be great for bragging rights, but in most situations they mean very little. What makes a car truly fast, and more to the point, fun, on road and track, is the spread of power and torque through the car's rev range.

A good example of this is cars such as the Honda S2000 and various Type-R models. There is little doubt they are fast, indeed in a flat-out race they are around the same performance as any other car with a similar power to weight ratio. But overall, the small powerband makes them very hard work to drive to their true potential, especially on the road. To truly exploit the car's performance you have to drop three gears from your usual cruising gear to go fast, so while you cruise at

motorway speeds in sixth, you have to drop all the way down to third to accelerate hard. Things are the same in lower gears, where you need to drop to first below around 40mph to truly get the maximum performance from the engine.

On the flipside, most cars on the road spend most of their time at lower rpms. And where there's a lot of tight bends that make it difficult to keep the revs high, modern turbo diesels (which while usually limited to under 5,000rpm, have got massive torque from around 1,500rpm) tend to be faster on the road than performance times would suggest.

It's not only diesels though. As petrol cars such as the Mk2 Focus ST are much the same, thanks to the big 2.5ltr engine spooling up the

turbo so it pulls as hard from barely above idle as it does at the redline, making them very easy to drive quickly.

This issue of small powerband versus big is magnified when tuning is involved, and it's joined by a third issue too on big power engines – the smoothness of the powerband.

Engine tuning can often raise and narrow a car's powerband. And while swapping a small turbo for a big one may gain you 200bhp, you might well have less lower RPM power than standard, and therefore be slower than standard up to 5,000rpm. Meaning you got to keep the revs up if you want to use any of the power you spent so much money achieving.

The powerband issue is magnified with naturally aspirated engines, as fitting wilder cams and so on to an engine that's already got a narrow powerband may make it so small it makes them almost unusable without a close ratio gearbox fitted. In fact we've come across cars, both naturally aspirated and turbo, that due to the tiny powerband and poor gearing, totally drop out the powerband every time you upshift, making for a car that has high peak power numbers, but is actually very very slow!

Having said that, by adding forced induction, be it a supercharger or a turbo, to a naturally aspirated engine that originally has a very small high rpm powerband like the aforementioned Hondas, will actually widen the usable rev range – giving great power from whatever rpm the turbo kicks in, or indeed from idle on a supercharger. This totally transforms how the car drives, making it much easier to drive fast.

Another issue with tuned powerbands is mostly relevant to big power cars, and that's how progressive and smooth the power delivery is. While high rpm only performance is often unavoidable, cars going from no power

to an absolute explosion of power in the space of 500rpm, something quite common with big turbo engines, just creates traction issues and makes the car hard to drive on the limit.

A similar issue is created by simply having too much torque. While a big chunk of torque at lower rpm, thanks to a big engine or a lot of boost, makes for a fun car to drive. Often it's simply too much for the tyres to handle, so it's just wasted in wheelspin, while a car with less grunt will accelerate off down the road.

To avoid this issue, a centrifugal supercharger from the likes of Rotrex or Vortech is usually used, as unlike a turbo or a positive displacement supercharger, boost increases linearly with rpm. So you get a tiny bit of boost almost from idle speed, but it increases steadily until full boost is reached at the rev limiter, meaning a smooth powerband and the maximum traction.

Providing you do have the grip to use it, can you really have an engine that has ridiculous amounts of power and torque right across the rev range? Well the answer is of course, yes, when you start with a big V8 or similar. But we can't all have massive V8s, and despite the well

known phrase "There's no replacement for displacement", there really is, and that's boost!

While it takes a talented engine builder to create an engine to the correct spec, it's amazing how much power and torque a fairly small engine can make at both low and high rpm when it's running a lot of boost. In fact it's quite easy to make a turbo engine have more performance from around 3,000rpm to 7,000rpm-plus than a normally aspirated

engine with over three times the capacity.

An extreme example of this is the 2ltr turbo rallycross engine, which runs huge amounts of boost and has up to 700lb/ft of torque and similar amounts of power when the inlet restrictors are removed. These make huge power from low rpm to high, and even the 8.4ltr Dodge Viper V10 only makes 600lb/ft, and not until nearly 5,000rpm. A top spec Rallycross engine will cost you over £60,000 though...



Dyno graph comparisons

One of the easiest ways to understand how a car will drive is to look at the dyno graph. This shows you where the performance is and, most importantly, isn't. Making it very easy to see if a car has a small high rpm powerband, a torquey low rpm one, or anything in between. It's also good for comparing different engines and modifications, and can be a massive eye-opener when you see how good, or sometimes how bad, certain engines can be.

What everything means on a dyno graph is pretty self explanatory, but relating it to the real world can sometimes confuse people. The easiest ways to look at it is maybe to ignore what line is power and what line is torque, and simply see how high the top lines are, and for

how long. A car with a massive rev range will have a lot of torque at low rpm, and a lot of power at high rpm, so the top line of the graph will be high right across the rev range, and when you're driving you can't feel the difference between power and torque as such anyhow, all you feel is the car is damn fast when either figure is high!

While a sudden increase in power or torque on a dyno graph is a good indication of where the main powerband starts and where it begins to drop can indicate where it ends, it's worth taking a good look at the numbers, as things can be deceiving. For example, where a car has 450lb/ft at 4,000rpm, but 'only' 250lb/ft at 3,000rpm, it might look on the graph like the performance is all 4,000rpm

up. But the fact is, even 250lb/ft is a lot of torque, so the worthwhile powerband is far bigger than it might seem at first glance.

Peak power and torque issues are similar. Many think there's no point revving beyond peak power. Some people even believe there's no point revving beyond peak torque. But it's always worth revving long beyond peak torque, and in many occasions beyond peak power too.

The reason is exactly the same as previously mentioned. That the car might make 500bhp at peak, but if it still makes, for example, 400bhp after that at even higher revs, it's still very fast – and is often accelerating faster than it would in the next gear up at a lower rpm!

Tim's 500bhp Civic, high-revving motor plus boost = huge grin

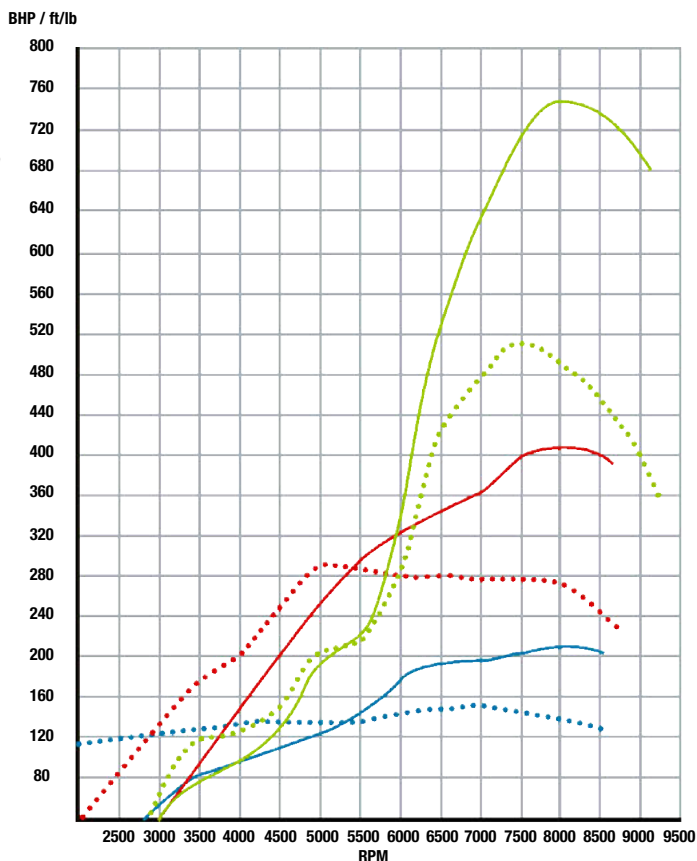
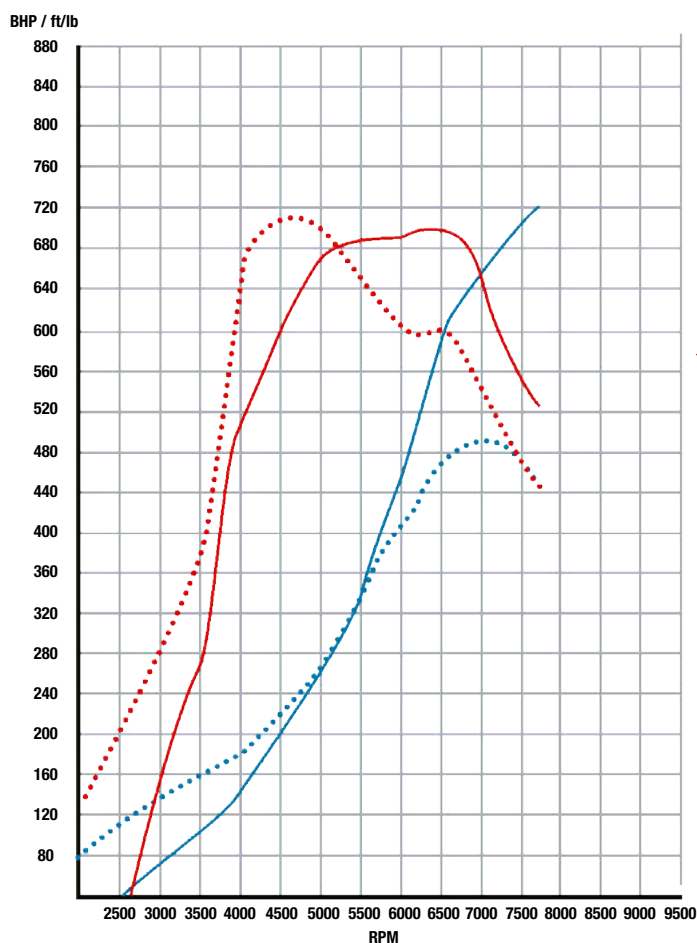


Naturally aspirated Vs turbo conversion, Vs big turbo on an EP Civic Type-R ►

The high revving Honda 2ltr lump from the Civic Type-R is one of the most common examples of a powerful engine with surprisingly little low rpm performance, and one that even with a large turbo fitted, gains a huge amount of both midrange and high-rpm

performance, as soon as the turbo starts making any boost pressure at all. And with boost starting at under 3,500rpm on the smaller turbo and 4,500rpm on the large one, both give the car a wider powerband, as well as making it hugely more powerful...

- BHP
... TORQUE
Typical standard naturally aspirated engine
- BHP
... TORQUE
Medium sized turbo on low boost with standard internals
- BHP
... TORQUE
Big boost, big turbo...



◀ Getting the right spec has a HUGE effect on the powerband...

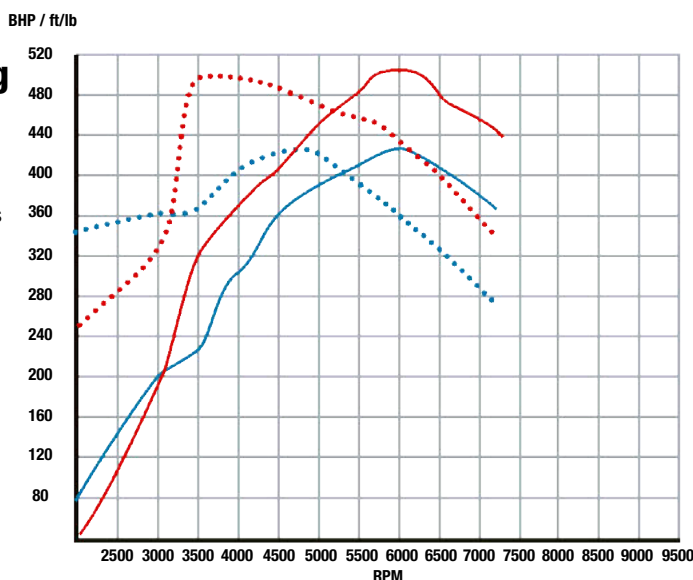
It might be hard to believe, but this dyno comparison is using the same engine for both graphs! It's a BMW M3 3.2ltr, fully strengthened internals, and turbocharged. The first graph was the original setup – while it made great power, it had pretty badly designed manifolds and a poor overall turbo setup.

The second graph is the same engine, in fact the same basic size

turbo, but with specially designed manifolds and turbo setup. As you can see, despite running the same size turbo at the same boost pressure, it spooled it up so much sooner, turning the car into a real torque monster.

However, it's almost impossible not to spin the wheels now it's got over 700lb/ft. So it's a good job it's a drift car...

- BHP
... TORQUE
Old spec
- BHP
... TORQUE
New spec

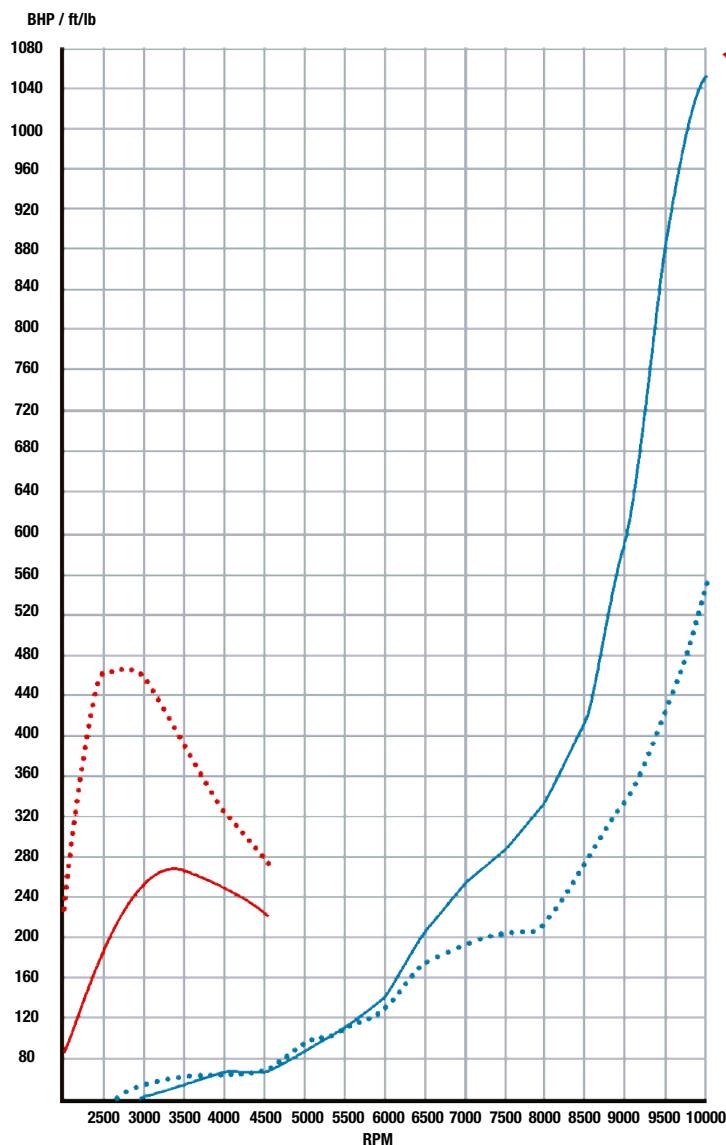


You CAN have the performance to match a big V8 with a much smaller engine... ►

We all know you make a small engine create much more power than a V8 engine by adding boost to it. But as long as you run a sensibly sized turbo and a lot of

boost, you can actually even have as much or more low- to mid-range grunt as well. And that's something most people probably wouldn't expect...

- BHP
... TORQUE
6.2ltr Corvette LS3
- BHP
... TORQUE
Toyota 2.5ltr 1JZ, standard internals, Holset HY35 turbo, 1.5bar boost



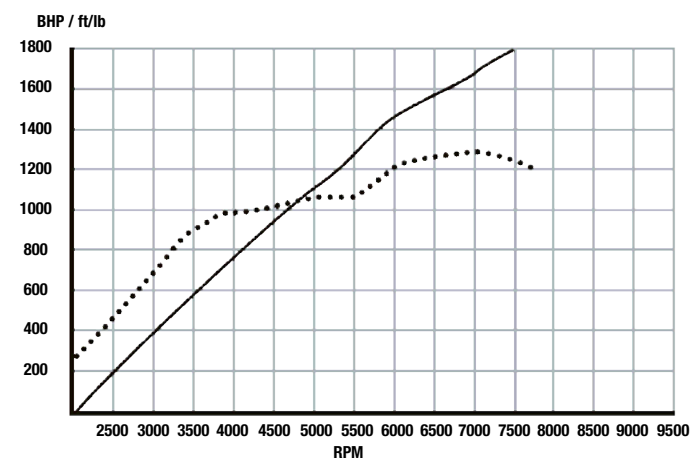
◀ Torque or horsepower?

As an extreme example of how different engines behave, this comparison is the ultimate. One is a well modified 1.9TDI VW engine with a hybrid turbo pushing out very respectable performance; massive low rpm torque, but only rewinding to 4,500rpm.

The other is a 1.5ltr Formula 1 Turbo engine from the 1980s, which pushes out over 1,000bhp, 800bhp more than the diesel. But it has the low rpm performance of a typical 1.3ltr modern engine (ie very slow indeed).

There's no doubt that above around 8,000rpm it's insanely fast, in fact at its peak it's more powerful than a Bugatti Veyron, but if installed in the same car, the 1.9TDI lump would easily out-drag it unless the driver kept the F1 Turbo lump spinning at 8,000rpm plus, and the savage power delivery, with power jumping over 200bhp in the space of 500rpm at high rpm, means it's only really suitable for high speed circuit and drag use on a car with huge amounts of grip.

1980s 1.5ltr F1 Turbo engine
1.9 TDI, hybrid turbo, remap



You CAN have too much power... ▲

As fun as ridiculous amounts of power sounds, aside from a drag car with giant slick tyres and a perfect glued surface, engines really can make far more power than you can ever put down on the road.

With 450lb/ft anywhere beyond around idle speed,

1,000lb/ft of torque by just 4,000rpm, and well over 1,200lb/ft at high rpm, no matter what gear or speed you're in, the tyres will just turn to smoke with this engine. This is a dyno from a 7ltr twin turbo drag car engine, and there's quite a few around with double this power...

There's more to fast acceleration than big power and torque

While having a lot of grunt is important, that's not the only way to go fast. And in many cases there are lots of much cheaper ways too...

LIGHTNESS!

Power to weight ratio is the key to performance, and it's why cars like Caterhams and indeed many motorbikes, are supercar fast despite having less power than a lot of hot hatches. Conversely it's why big busses and trucks are slow, despite having more power than most supercars. If your car can have a decent amount of weight removed from it, and you can live without the creature comforts, a lighter car is a faster car.

One thing that's especially noticeable with a lighter car is that a lack of low rpm torque becomes less of an issue, as when there's less weight to lug around, less grunt is needed to get the car moving quickly.

GEARING!

Standard road car gear ratios tend to be a compromise between performance and fuel economy, and depending on what you use the car for and the type of powerband your engine has, you can drastically improve your acceleration without touching your engine spec. By simply changing gear and diff ratios.

On rear-wheel drive cars, the easy thing to do is change a car's diff for one from another model with a shorter gear ratio. This is often a straight swap, and you can drastically improve acceleration, meaning that while your top speed may only be a little, or possibly no lower, you will get to these speeds faster than even increasing the engine power by quite a large amount would achieve.

The other gearing option, while often not as cheap, is adjusting the gearbox's individual gear ratios. This is a job for the professionals and tends to involve fitting a competition spec gearbox. But with closer ratio gears you

can give the car lightning fast acceleration, and also make it easier to keep engines with peaky powerbands in their optimal rev range. What many competition cars do is run a longer first gear, as most standard first gears are far too short for performance use, a standard ratio second gear, and closer ratio gears beyond that, giving a lower top speed, but a constant wave of hard acceleration in every gear.

GRIP!

Does your car have 100 percent traction under the hardest acceleration possible in every single gear? If not, you'd go faster if you had more grip. The reason many production cars such as Evos and Imprezas have 0-60 times that are often two seconds faster than front and even rear drive cars with the same power, is they have the grip to use every last bit of it. Rocketing off the line even when launched at full throttle and maximum rpm – and without any wheelspin.

The difference a set of wide sticky track tyres or an LSD can make to traction can transform a car, and it's not uncommon for a powerful car that wheelspin even in high gears with skinny cheap rubber and a standard diff to have full traction in all but first gear once it has a proper LSD and sticky tyres fitted. This amounts to changing the performance from something that most hot hatches can pull away from in to something that can keep up with supercars...



The incredible Hulk



SVM technicians are on another level

25,000BHP INSIDE

WE TAKE A LOOK AROUND THE UK'S MOST POWERFUL GARAGE

With 49 ramps and the reputation for building the fastest GT-Rs in the country, SevernValley Motorsport always have something special (and bloody powerful) lurking inside. For example, when we turned up last week to shoot their 1 Series race cars (feature coming soon), I decided to take a wander around the workshop and I stumbled across one or two legends of the GT-R world.

Amongst them was Gundam, the R35 that hit 238mph at Bruntingthorpe a couple of years back. Then pretty much sitting on the opposite ramp is, perhaps, the most famous SevernValley GT-R of them all... The Hulk.

SVM Manager and Hulk owner, Jay

Cannon, is currently having the car rebuilt to a higher spec. The car will be ready for its launch in the coming weeks... look out Telford! These two cars have over 2,600bhp between them.

At the other side of the garage were another five GT-Rs in for big rebuilds, including one from Romania! The biggest build currently taking shape is Lars' white GT-R with an active rear spoiler – SevernValley are hoping to squeeze 1,800bhp out of this one! Yes 1,800bhp. Then there's Dowie's grey GT-R with 1400bhp, one of the most powerful GT-Rs in the UK!

These were just a handful of the cars being worked on. What a place.



They come from as far afield as Romania to have some of that SevernValley magic.





*That's what 1,800bhp
could look like*



*SevernValley don't
just do GT-Rs*



Jay Cannon's daily...



*Crazy GTR with a trick
active spoiler*



CONTACTS

WWW.SEVERNVALLEYMOTORSPORT.CO.UK



*Now that's
an intercooler*

GREEN MONSTER

WITH A CLAIMED 314BHP, THIS SUPERCHARGED CLIO 200 IS A MEAN GREEN, TRACK DAY MACHINE!

There's a school of thought in the tuning scene that says track cars have to be uncompromising, stripped-out beasts. It kind of makes sense too, as the less weight a car is carrying the more nimble and better handling it'll be.

Everyone understands this, from manufacturers trying to shake tenths of seconds off their lap times, to the fella on his driveway hacking away at his hot hatch's insides. But what if you don't want the noise and uncompromising ride? What if you want to have fun on the track, and use your car to drive to the shops? Well, there is another way. And it's very ably demonstrated by Matt Bentley and his stunning Clio 200.

With some well-thought-out performance upgrades, he's transformed the class-leading hatch into a back road terror that can also hold its own on track. And there's not a fixed back bucket, or roll cage in sight.

We caught up with Matt at last year's FCS, where he was part of the FrenchUK club stand. Working as a mechanic for a Renault dealer, Matt was always going to end up in a fast Renault. "It was a sales demo car and after it being on the forecourt for about three months, I couldn't resist and bought it," he says. Still an apprentice at the time, he didn't have pots of cash to throw at the Alien Green RS, so he started by powder-coating the stock alloys and adding a rear spoiler.

No matter what you think about the Clio's awesome handling and sweet, high revving engine, there's no getting away from the fact that it lacks outright grunt. Now that's fine for many, but what if you want to really bully the big boys on track? Well you'll be needing more power my friend!

There are several options with the Clio 200. A Megane F4RT unit can be fairly easily dropped in and offers an instant increase in

power, especially mid-range torque from the turbo unit. Then there's NA tuning, which with the addition of throttle bodies, head work and so forth can unleash more power, but gets expensive very quickly, for relatively small gains. Or, you could do what Matt did and fit a supercharger kit. The beauty of this is it retains the stock engine and is a genuine bolt-on performance solution.

The kit in question was fitted by a Northampton tuning firm and features a Rotrex C30-90 supercharger. The kit includes a front mount intercooler to keep those all important charge temps down, larger 630cc injectors and uprated fuel pump. The charger itself is mounted down by the front bumper, so it's all very discreet and OEM looking.

"The car came back with 294bhp and I have to say it was amazing," comments Matt. The blower had transformed the Clio from a high revving machine to a mid-range monster.





*Blimey, 6:26pm! Doesn't time
fly when you're having fun*



We're loving the black details and OZ rims

The boost in low to midrange power meant the RS 200 was now able to punch far above its weight. However, all was not well.

"I started having issues with the piggyback ECU and the car not starting," says Matt. He put up with it for a while, but eventually the frustration of having all that potential power, but not being able to use it, led him to seek advice from Renault tuning experts RS Tuning.

Paul and the RST crew, took the Clio into the workshop and gave it a thorough going over. The guys found that the piggyback ECU was causing the problems, so they decided to remove it and work on the stock management instead. They also discovered that cylinder three was leaking and the spark plugs and injectors weren't up to the job. So they swiftly

fitted larger 630cc injectors that could deliver enough super unleaded to the 2-litre lump. New spark plugs were also recommended before the stock ECU was remapped. A couple of hours of custom mapping followed, until Paul told Matt the good news – he now had 314.6bhp and 226lb/ft of torque.

So not only were the starting problems a thing of the past, Matt had also come out of this with more power than he expected. That's a win-win right there! As Matt himself states, "Needless to say, the drive home was fun!"

With the oily bits fully sorted, the rest of the Clio came in for some attention. With plans to take the car on track, Matt wanted to beef up the suspension, but not at the cost of ride comfort. Rather than fit uncompromising and


harsh coilovers, he did some research and went for a set of Gaz springs and dampers. This quality kit allows the ride height to be dropped nicely, and gives a sure-footed performance on track – without shaking your fillings loose on the road.

To reduce some of the unsprung weight and to add to the great looks of this Alien Green Clio, Matt has gone for a set of OZ Ultraleggeras. These black 8x17in wheels are some of the best you can buy and combined with the super-sticky Yokohama AD08 tyres, give Matt a fighting chance of getting all of that 314bhp down to the road or track.

Watching Matt give it some welly at Castle Combe, it's clear that this RS Clio can punch well above its weight, and with that supercharger whining away, it sounds fantastic, too. To allow plenty of drama-free laps, the brakes have been upgraded with larger KTR discs and Ferodo DS2500 pads. With Brembo 4-pots clamping down on them, this brake setup means Matt can brake harder and later into corners.

But there's more. Because this was intended to be a comfortable car, the inside is a very nice place to be. The Recaro seats are some of the best you'll find, and Matt has created his own gauge pod, which sits on the dash. A tactile Sparco wheel and RS gearknob completes this quality interior.

Outside, the Clio has been treated to some cool details such as the black Renault badges, front grille and fog light surrounds. With a carbon-clipped front splitter and some ultra-bright HIDs, this RS has a refreshed exterior that attracts a lot of attention.

So is this the perfect balance of track weapon and practical roadcar? Well it's certainly close – look out for it on a track near you soon. 



TECH SPEC: RENAULT CLIO

TUNING:

2-litre F4R; Jam Sport Rotrex C30-94 supercharger kit; front mount intercooler; 630cc injectors; uprated fuel pump; stainless 3in exhaust; RS Tuning remap; white boost pipes; various parts powder-coated black; uprated clutch.

CHASSIS:

Brembo 4-pots with KTR large discs and DS2500 pads; Gaz shocks and springs; 8x17in OZ Ultralegerras with Yokohama AD08 tyres.

INTERIOR:

Recaro sports seats; custom dash gauge pod; Sparco steering wheel; RS gearknob.

STYLING:

Black Renault badges; Streamline exhaust trims; Kazan kick plates; grille and fog surrounds in black; HIDs; rear spoiler.

THANKS:

Big thanks to RS Tuning and my friend Dave for helping with some work on the car; also thanks to Kyle at KDM Detailing & Valeting for doing a brilliant job preparing the car for the shoot; a big shout to all my friends at Renault UK.



This has filled a fair few rear-view-mirrors



The interior is purposeful yet comfortable. Lovely



MATT BENTLEY

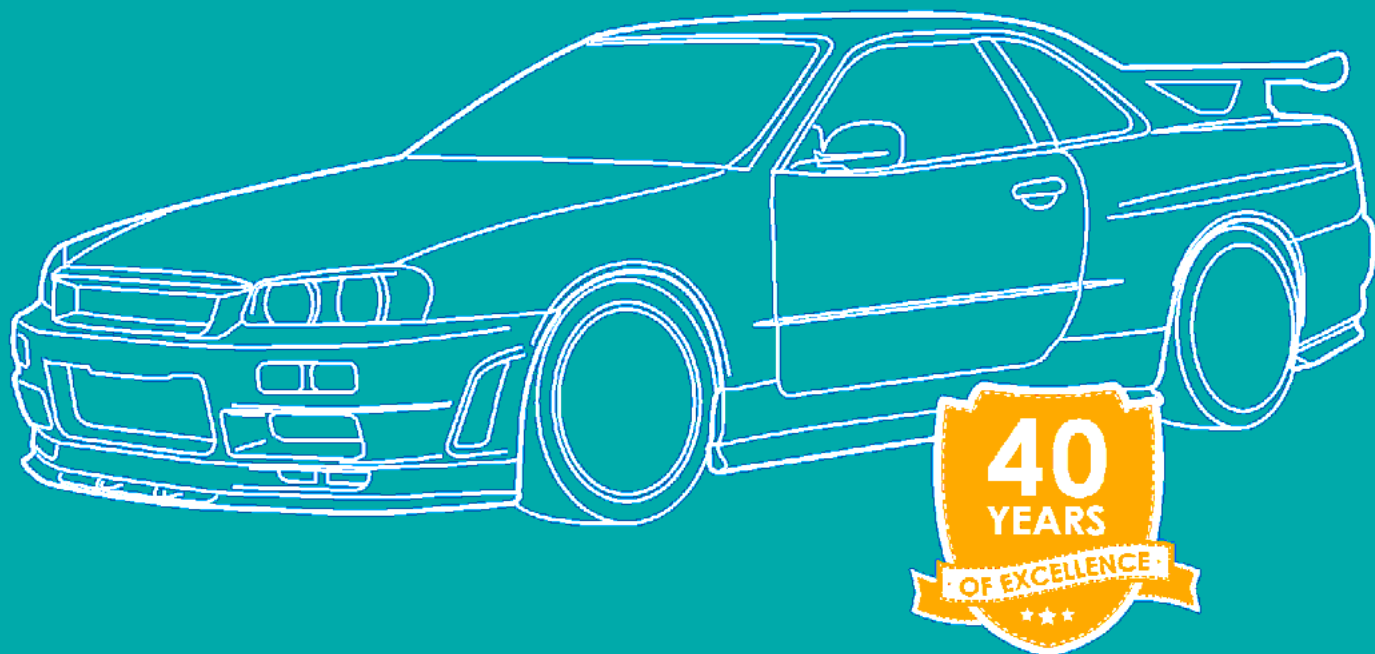
Fave upgrade: The supercharger

Most expensive mod: The supercharger

What's next: Forged block, R26.R 'box, cage



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**Bola ZZR**

Size: 8.5 and 9.5x19, 8.5
and 9.5x20-inch
PCDs: 5x98 – 5x130
Offsets: 25-45
Finishes: Gunmetal, silver with
polished face

**BOLA ZZR, £795 (SET)**

Even though true directional wheels have become something of a holy grail mod this season, they're still pretty rare to find. Now, that may be because most wheel companies actually want to make a few quid and having a separate mould for each side of the car, or 4-separate moulds if it's a staggered setup, isn't exactly what you'd call economical. Then again, it could be because most are manufactured for a limited number of PCDs (usually the German ones) and geared towards the segments where they'll sell the most. You can hardly blame the firms that actually produce them – business is business after all, right?

On the plus side though, this makes

directional wheels all the more desirable and no one can deny these 10-spoke stunners from Bola are on the jaw-dropping side, especially those super-concave 9.5s – just look at 'em!

The elegant, sculptured spokes and concave faces are one reason we love these new rims, the choice of finishes is another but perhaps the most important thing about these particular directional marvels, is that they can be made to fit 99-percent of 5-stud motors on the road. No other cast-directional wheel can even come close to offering that. In fact, along with the almost unbelievable price, it opens up a whole new world for modifiers who aren't rocking the more conventional big

German cruisers.

So how do they do it? Well, like all the wheels in their current range, the ZZR here features Bola's patented 'PCD pockets', meaning they can be custom drilled to any application between Fiat's 5x98 and Porsche's 5x130 without using a bolt-on centre plate. What's more these can also be machined to any offset between ET25 and 45 so, assuming you can actually get a set of 19 or 20-inch monsters under your arches, they'll be able to sort you out good and proper. In other words, thanks to Bola, directionals for the masses are finally here. And we can't help but salute that!

www.bolawheels.co.uk

CARRE Astro

Size: 6.5x13
PCDs: 4x100
Offsets: ET35
Finishes: Black with polished face



CARRE ASTRO, £55 (EACH)

In a world crammed to the gills with super-wide 18-inch (and above) rims, it's been a while since we've seen such a stunning 13-incher hit the streets – especially at this sort of money.

Available in a 4x100 PCD, this retro-styled, concave beauty will definitely look the part on plenty of old skool cars (Mk1 Golfs and Polos immediately spring to mind). But with a new 7x15-inch version in both four and five stud PCDs on the way too, it opens up a whole new world of possibilities for the Nu Skool crowd.

Little hoops are still super cool and when you can bag a set of these for just over 200 quid, that makes them an absolute no brainer.

Low pressure cast and designed over on the continent we haven't been able to get the entry-level CARRE range here in the UK before. But now Wolfrace are bringing in the whole lot, we can all be quids in. Get online and see what else they're cooking up.

www.wolfrace.com



DIRENZA WHEEL SPACERS, FROM £50

The bods at Euro car specialists Direnza certainly don't mess about when it comes to getting their new products out there. I mean, you would think they'd test the water a bit with a few limited fitments for these lush hubcentric wheel spacers. But no – they've hit the shelves with over 60! The new range, precision engineered from aircraft grade aluminium in 10-50mm widths, covers Ford, Vauxhall, Nissan, Honda, VW and just about everyone else in between.

Nowadays spacers are an essential tool in getting your stance spot on, but as they also widen the car's track, they're guaranteed to do the business for your handling and stability too. What's more, for jobs like ramping up the suspension and big brake conversion clearance, they can be absolutely essential.

Anyway, whatever you need 'em for, these are easily some of the best on the market. The price is bang on too!

www.direnza.co.uk

ZILLA AIR FRESHENERS, FROM £1.50 (EACH)

Good news everyone – those nutters over at Zilla have just put out their new range of sweet-smelling air fresheners at proper pocket money prices. Choose from their Gentleman Swindler, Storm Zilla, Space Death Unicornzilla, Hawaiian or Ice Skreamie Fade design, all in different fruity flavours. Or just get the Fresh Pack containing the lot for under a fiver. Yes, we think they've totally lost the plot, but you've gotta love their style! www.zillalife.com



GRIFFIN SURVIVOR CUSTOM CASES, FROM £26

The world's manliest phone case just got that bit more badass, because now you can have one in pink... or any of a load of other lairy colours. That's right, the famous, four-layer Griffin Survivor is now available to customise on their website, and you can even choose different colours for the polycarbonate frame, silicone shell and removable belt clip. Previously only available in solid black, and developed with the US Military, they have to be the most hardcore protective cases on the planet. Keep your iPhone 4, 5 or 6 (including all the S and Plus models) safe from the wind, rain, dust and sand in the workshop, war zone or just when you feel like being a right clumsy bastard. You couldn't break this one if you tried! www.griffintechology.com



FORGE IPC VALVE, £104

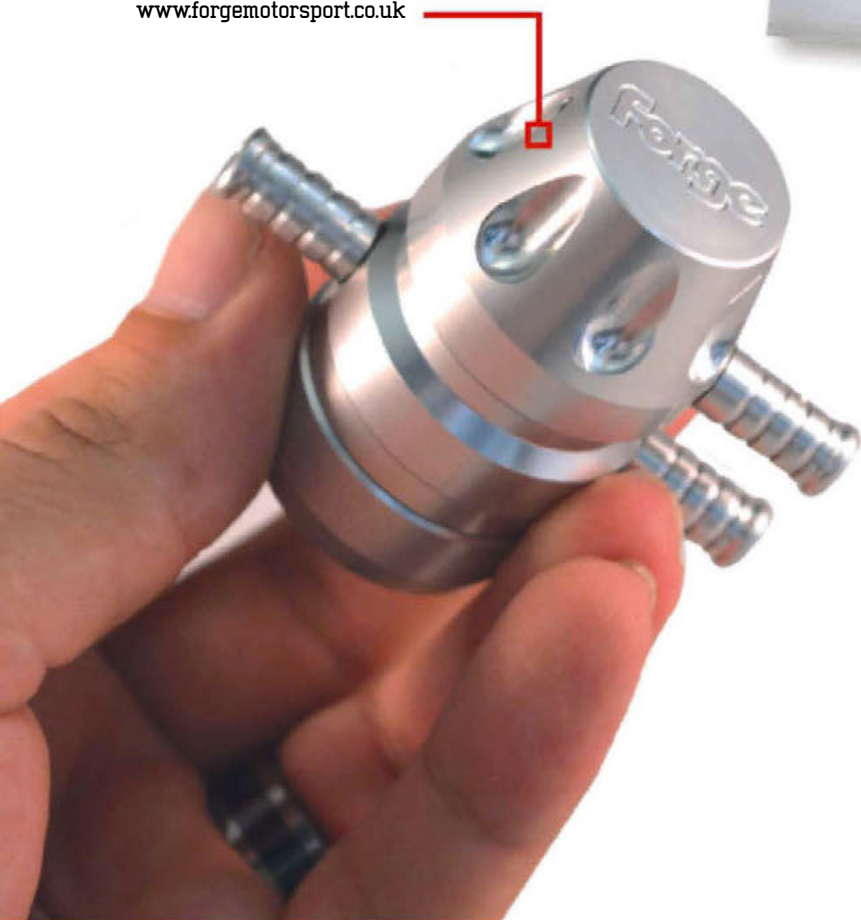
This wondrous little device has to be one of the cleverest ideas to hit the market in ages. What it does is solve the problem of keeping your dump valve gas-tight when running high boost, while still giving lightning-quick response times and immediate throttle response.

Traditionally all high quality dump and diverter valves have interchangeable springs helping you match them to your state of tune. If the standard spring is too weak to hold in all that added boost, you fit a stiffer one, that's all you can do. The trouble is, a stiffer spring is physically harder to compress, making the response time slower and, if the spring is too stiff, it just won't open at all. It's hardly ideal if you have a modern car with switchable boost maps too. It can only be matched to one at a time.

Anyway none of that matters anymore because, due to some ridiculously clever engineering, this cracking little mod makes the dump valve spring operation completely independent of the pressure inside. That means it'll work perfectly at any boost level and doesn't have to compensate for the pressure loss in the intercooler - they've even had a test car up and running with no spring at all!

Got a turbo? You'll be wanting one of these then.

www.forgemotorsport.co.uk



PIPERCROSS R8 FILTER KIT, £222

Chances are you haven't got an R8 V10. But, just to prove they can sort out the induction on just about any motor on the road, Pipercross have given the big Audi a sexy chunk of their patented high-flow foam action. As always this kit should see a significant BHP hike by way of its increased surface area and multilayer foam construction giving up to 30 percent more airflow over standard. Marvel at its magnificence in all its British hand-crafted glory... and then order a kit for your Civic!

www.thepipercrossshop.co.uk



ZEALOU5 DEEP DISH WHEEL, £220

No one quite knows silly-power Jap culture like the boys over at Zealou5, so it's no surprise that their latest product here is cooler than a polar bear's love spuds. There's some seriously sweet details on this top quality, limited edition wheel too. We're loving the trademark green stitching and, if you can speak the lingo of the far east, you'll already know that the engraving says 'turning cars into heroes'.

There's a flat version on its way later in the year, but for now this super-lush deep dish monster wouldn't look out of place in any street warrior - on Skylines they should come as standard!

www.zealou5.com

TOOLBOX ESSENTIALS



SEALEY BIT SET, £15

Power bit sets certainly don't get anymore premium than this pocket-sized, colour-coded job. Designed for the professional user and including both an automatic quick release chuck and a quarter-inch socket adaptor, this Chrome Vanadium S2 steel set should contain just about every random star, torx, hex and security bit you'll ever come across.

Car manufacturers, especially the German and Japanese ones, love to chuck in a load of silly fixings to stop you taking them apart - with these you can beat them at their own game. Sadly, the days of stripping an entire car with a Phillips screwdriver are long gone. But, thanks to Sealey, life just got a whole load easier.

www.sealey.co.uk



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Dodo Juice

Future Armour Spray Sealant

No one likes wasting their time and maybe that's why LSPs (last stage products) are so popular in the detailing world. Whatever the case, they're certainly essential because without that sacrificial layer beading off all the water and keeping the grime away, your freshly buffed paint work would have literally no protection at all. Having to clean the bugger every time the heavens open isn't the most appealing of prospects either, especially here in the UK.

Now, when you've finished cleaning and polishing your car, there's literally hundreds of LSPs to choose from but

basically, whether they're hard, pastes, gels or sprays, they fall into two categories – waxes or sealants.

Waxes are a natural product, usually containing a certain percentage of a wax like carnauba. Sealants are totally man-made and will be stuffed to the gills with polymers and gloss-enhancing ingredients.

Many have their own opinions as to which are best but, personally I'm a big fan of both – if it works well, who cares if it came out of a tree or a test tube?

I will admit though, there's something nice about having a product that's specifically

engineered by the men in white coats to be the best it can possibly be. Think of it like using fully synthetic oil in your engine – that's totally man made right?

Yep, this is the 21st century and if you're looking to protect your paint with some proper modern day technology – this brand new nano sealant from Dodo Juice could be right up your street...

PRICE: £3.95 (100ML)
www.dodojuice.com

Tested

Versatility has obviously been high on the agenda while Dodo Juice were testing and trialling this product. It's hard enough making a sealant that's up to scratch nowadays (chiefly because everyone and their pet Alsatian is a detailing expert) but what takes a monster session of scientific engineering is developing one in a spray form that can also be used as a rinse wax. That means it has to offer premium performance whether it's applied to wet or dry panels.

Of course this also means that I had to test this one twice. But, then again, that's been no real hardship because this stuff is seriously easy to use. That's a massive plus, because plenty of other LSPs can take some serious elbow grease!

Being a spray it mists on in nanoseconds and it takes more effort to breathe than it does to buff off the residue. It's even quicker on wet panels, just spread it around a bit while you're drying the car (detailers call that levelling the product) and give it a quick buff at the end.

Apart from adding plenty of deep, rich shine one of the most important qualities of any LSP is its ability to bead and sheet off water. I treated half a bonnet with both wet and dry applications – you can check out the result for yourself below. Awesome eh?

I can certainly see why they call it Future Armour – here you're looking at the sealant of tomorrow.



Midge's verdict

Dodo Juice have always been a company that's universally regarded as one of the very best on the detailing circuit. These guys simply don't bring a product to market until it's been extensively tested, refined and is 100-percent ready to rumble. It shows.

For this reason, too, they're not a firm that knocks out 10 new products every day, instead they concentrate on getting the very few they develop spot on. That's probably why I can't fault this one, the engineering is perfect.

Performance wise there's no compromise. Applying to wet panels is extremely fast and, although I can see it's great as a stand-alone drying and shining aid, that can be particularly handy as a quick top up to any previously-applied LSP during a normal maintenance wash. On dry panels it can be used instead of your regular 40-odd-quid pot of hard wax as the final layer of hardcore protection from the elements. Either way it gives the same outcome – a glass-like surface with crisp reflections.

What's perhaps most apparent is the value for money, this stuff is so strong you only need to use a tiny, tiny amount whether it goes on wet or dry. In fact, at first I thought I was doing it wrong and would have to go back for a second coat. I didn't.

To protect a whole car as a stand-alone sealant probably uses no more than a pounds' worth and, given that it's durable enough to offer 'Armour' like protection for 2-4 months, even the smaller 100ml bottle could last you well over a year. That's got to be the best investment of 4-quid I've seen for a long time.

In a nutshell: Awesome value, quick on dry panels, even quicker on wet.

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Features

- 10.8V 1.3Ah Li-ion battery
- 90NM torque max
- LED work light
- Battery indicator
- Variable speed trigger



I don't know about you but nothing brings quite so much joy to my heart as when I can get my impact wrench on a bolt rather than having to huff and puff with a ratchet or spanner (you really need to get out more mate - Jules). There's plenty of pro mechanics and builders that share my view and perhaps that's why these tools are so popular in just about every trade out there.

Pneumatic-powered items aside, what you'll usually find for cars are expensive heavy-duty items with 18-28Volt batteries designed for mega torque. For me, that makes this 10.8Volt medium to light duty offering from Silverline all the more interesting. At under 50-quid and designed for DIY versatility and ease of use, rather than extreme power, it makes me wonder if

others are missing a gap in the market for the home spanner spinner. That said, I guess the real question is; will it be any good for working on your motor? So, let's find out...

PRICE: £49.74 (LIST PRICE)
www.silverlinetools.com

In the box

What you get for the money is impressive. This puppy comes with a 3/8-inch (the middle sized one on a standard metric socket set) square drive chuck, variable speed trigger and all-metal gears for exceptional longevity. There's also a handy LED to illuminate whatever you're working on – a nice touch and pretty unusual at this price point.

I love the fact that the whole thing is relatively compact, unlike the more powerful half-inch drive versions out there it doesn't come with a whacking great battery on the bottom. Instead the lightweight, slimline jobbie just slides neatly into the handle making the whole thing far less cumbersome than plenty of others that I've tested, including my own.

Speaking of the battery, this one utilises Silverline's excellent 10.8V Li-ion unit which is available in a large range of their tools. As I've found out before this particular power pack is absolutely bomb-proof, lasts for ages and has a trick LED status indicator built in. Again this gives a suitably high-end feel.



Midge's verdict

For the most part impact wrenches are a tad hardcore for use on anything other than the largest of fixings. For me though, the fact that this Silverstorm job isn't huge and super-powerful is something that makes it all the more versatile. There's an undeniable dose of finesse that comes with this tool, it's far more James Bond's Walther PPK than the Terminator's Uzi. Don't get me wrong 90NM of torque is plenty, it'll take off most bolts around the engine bay, chassis and the like, but it's not so much grunt that you'll immediately start breaking off everything you touch. It's true you're not gonna be removing huge seized nuts, but it's not designed for that anyway – remember it's 50-quid not 300.

With that in mind, I still found it more useful than most for putting on expensive wheels, purely because there's no chance of dangerously over-torquing 'em. Most manufactures recommend 110-130NM on wheel bolts and studs so you can just whizz them on and do the final tightening with a torque wrench, just like you're supposed to.

With the right socket-bit this can also be used as an impact driver, which will change you life over from using a normal drill when it comes to taking out and banging in screws. Although you might not be the type who likes building installs and stripping out dashes, sooner or later you will need to screw something into something else and you'll think, 'that little fella was right.'

In a nutshell: Handy, very handy



Star Subwoofer

VIBE CVEN

12-inch Subwoofer,

£349.99

We gave you a sneak preview of this mental bastard in last month's TRAX Products Special as it popped up in the huge retail village at the event.

But now we've got the full lowdown, we're ready to amuse and amaze with everything you need to know. Welcome to the world of SQL people!

WHAT'S CVEN?

We all know VIBE Audio are famous for making some of the more serious bass-generating equipment on the market. CVEN is simply their new range of woofers but it comes with a big difference, this 12-incher and its smaller 6-inch brother are specifically designed as SQL woofers and that's what makes them a massive deal.

Now, before you ask what SQL is, let me explain. Most subs are geared towards either reference quality sound (SQ – Sound Quality) or massive volume (SPL – Sound Pressure Level). It's rare, if not unheard of, to get a mix between the two that works well, certainly not without a bill well into the thousands.

With CVEN though, that's exactly what they're offering – reference quality music reproduction in a chassis that can produce big volume. Sounds like the perfect all-round musical setup to us.



HEY GOOD LOOKIN'

For such a business-like high output woofer it's actually something of a stunner. So very often with subs that can produce such high SPL levels the function is right up there but the form is somehow forgotten. Not here though, there's a high end feel to it. The front gasket in particular is a thing of beauty, machined from high quality aluminium and we don't know anyone who wouldn't be proud to have that sticking out of their install.

POWER, POWER... MORE POWER

There's no other way of saying it, due to its special high-temperature, 4-layer voice coil and some serious magnets this thing will eat up 1050Watts all day long. That's the RMS power figure too, peaked out it's an almost stupid 2100Watts. In fact, you need over 500Watts of grunt just to get it moving – only the most serious amplifiers need apply.

Don't forget this woofer is all about quality sound too, so while it's cranked right up pumping out all that bass you'll still be able to hear every musical detail. Well, right up until you go deaf of course.

HARDCORE BUILD

What's equally as impressive as the looks is the build quality – this one is obviously put together to last. In fact, you can see some distinct similarities between this CVEN unit and VIBE's expert-level SPL BlackDeath range.

Audiophiles will marvel at the way that everything's there for a wholly scientific reason too. There's a specially developed foam rubber multi-roll surround allowing better linearity throughout the subwoofer's excursion range (it goes in and out with better stability).

A FEMM (Finite Element Method Magnetics) designed motor system to ensure linear flux saturation and minimal distortion (it sounds better). There's even double-stacked Y30 ferrite magnets for immense power handling (there's that P word again).

Add that lot to a removable rubber boot to keep the whole thing protected throughout even the most hardcore use, it should last a long, long time. With those credentials we wouldn't be surprised if these are still kicking out the bass in 3015!

Wanna know more? www.vibeaudio.co.uk



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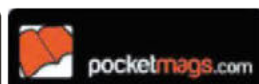


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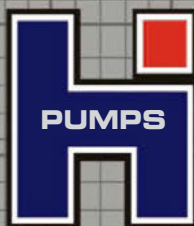
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British Beef

THIS HIGH-POWER, HOME-GROWN MONSTER NOT ONLY MAKES ALL THE RIGHT NOISES – IT QUITE LITERALLY RAISES THE ROOF!

It may sound like something of a ridiculous statement, but the VIBE T5 was built, first and foremost, to be practical. Now obviously at this point you're asking exactly how a VW van packed with 24 of the most hardcore woofers to ever hit the streets, not to mention six of VIBE's legendary Reaper amplifiers capable of producing 14,500Watts a piece, can be remotely practical? Well, unlike many an expert class competition car, it drives – and with the help of Forge Motorsport and Revo it drives pretty bloody well at that. You see, British firm VIBE Audio is possibly as well

known for its bonkers demo cars as they are for producing some of the craziest sonic weaponry known to man. Over the years they certainly haven't held back in creating the odd show stopper and here at FC we've featured them all. There's a couple right at the top of the crazy list that spring to mind too – the BlackDeath Hearse and the Judge Dredd truck.

The trouble is, getting the DVLA to declare a four-tonne Daimler or something taken straight from the set of our Jules' favourite Sly Stallone movie (except for Rocky, obviously – Jules), completely road legal isn't the easiest task, actually piloting

the things around the UK and European roads isn't the most appealing job either. And that's where the T5 comes in nicely.

Whereas previous builds have been specifically designed to show off their huge range of products in new and interesting ways, something in which they always excel, the VW van is a wholly more serious concept. This one was designed and constructed with one thing in mind – to hit Salzburg in Austria and show the whole of Europe how the Brits do it in competition.

Now, due to the kind of serious wattage speakers, subs and amplifiers VIBE produce, their demo vehicles have always





AUDIO CAR: T5 VAN



A large portion of those 160.1dB comes from here

been ridiculously loud. But competition at this level, especially as a manufacturer where you're automatically entered into the top class, is a whole different ball game. What's more, the Euro Finals invite the champion and runner up from each country to compete, and the SPL Class is always one of the most hotly contested.

Luckily though, the boys at VIBE knew exactly what to expect. Having been a massive supporter and sponsor of the EMMA (European Mobile Media Association) events over the past few years they were hardly going into their very first competition blind – although with just a month for the whole build, time was tight to say the least.

Obviously, when it comes to earth-shattering equipment, choosing the right gear to fill their demo was never going to be a problem – their expert-level BlackDeath range offers some of the most powerful contraptions that have ever been on the worldwide audio market. The issue for VIBE was far more grounded in practicality – finding a vehicle that would be able to stand up to the sheer bass force their gear can serve up.

From the start it was obvious they needed a van that was built tough. Try this sort of malarkey in a Renault Kangoo and you'll likely be picking up bits of it around

a three-mile blast radius. The rugged build quality of the T5 Transporter fitted the bill just perfectly.

That's not to say there wasn't teething problems, even the favourite van of the fatherland can only do so much, and in testing the boys managed to blow out the windscreen sending shattered glass all over the workshop – and that wasn't even running at full whack. So, if you were wondering what that 'stripper pole' in the cab is for, now you know. It's the only thing stopping the bass literally raising the roof.

Spearmint Rhino-style enhancements aside, the business end is the 30mm thick,

They even look loud





HOW LOUD?

160.1 decibels is beyond loud. Considering your eardrums will rupture at around 150db (the volume of a jet taking off next to your head for example), it's a dangerous level of sound and a figure that's not easy to achieve.

Think of it like this. Your mum's Hoover will kick out around 70db and, generally speaking, for every 10db recorded above that the volume we perceive is doubled. 80db is twice as loud as that Hoover, 100db is eight times as loud and a 120db thunderclap is 32 times louder. With that in mind the VIBE T5 is around 512 times louder than a vacuum cleaner, or twice as loud as it takes to blow your ear drums out. The average human pain threshold is around 110db, so, suffice to say, you don't want to be sitting in this bastard when they crank it up!



AUDIO CAR: T5 VAN

Brace yourself. And they're not joking




fibreglass-reinforced plywood enclosure. Braced on the inside with 14mm steel bars, it houses the 12 'Bubonic' 15-inchers that produce the majority of that awesome sound pressure. Designed as a giant fourth-order band-pass enclosure, the guys even had to fly in a team from Italy, including Danny Boy from Team Bull Sound, to help with its construction.

VIBE stands for Vented Innovative Bass Enclosures and, with this as an example of their work, it's easy to see why they picked that name all those years ago. The engineering to get the right volume of air, the correct frequencies to pass and the perfect balance of hardware and materials is immense.

Key to the van's acoustic performance, too, is the smooth flow of air in and out of the cabin. This meant the original bench seat had to be totally re-designed so it didn't cover the gigantic bass port. The new structure, incorporating a pair of super-posh Cobra Misanos, is not only functional for this very reason but also adds undeniable touch of leather-lavished class.

Come to think of it, the whole installation is cosmetically flawless from the custom doorcards to the rear amp-rack, an unusual quality in any vehicle with such hardcore intentions. Still, as the spec confirms, it's certainly got the minerals to back it up too. And in competition that's what matters most.

So, the build was a tad 'involved' and I'd imagine the 19-hour drive across the continent wasn't the biggest highlight for the boys either. But the most important question is, did it do the job? Well, yes. Yes it did. In fact, it showed grunt of almost biblical proportions on the day. So much that, during the 'doors shut' part of the round, they managed to rip the inner roof skin off and break the spot welds running towards the B-pillar – and that's with nothing but the force of shifting air.

Now you would think the boss would be pissed at the harsh treatment of his new van. But he couldn't be – not when they announced the result. Recording a massive 160.1dB, the VIBE T5 was officially crowned the loudest vehicle in Europe. Now, that's what I call a competition debut! 

If Mark asks you to sit here, politely decline and RUN



Door speakers anyone?

AUDIO:

Custom doorcards housing 6x BlackDeath Pro 8 midwoofers and 3x BlackDeath Pro 4 Tweeters per door; side housing 2x BlackDeath Stereo 2 Amplifiers, 1x BlackAir Stereo 4; rear build, 6x BlackDeath Bass 2 Reaper amplifiers, 12x BlackDeath Carbon SPL 15-inch Bubonic subs in custom bandpass enclosure; 2x BlackDeath Pro 8 Midwoofers; 2x BlackDeath Pro 4 Tweeters; 28x kinetic batteries.

CHASSIS:

20in staggered 3SDM 0.01 wheels with 225/35x20 and 255/35x20 tyres; V-Maxx coilovers.

INTERIOR:

Cobra Misano leather and Alcantara front seats with custom embroidery; centre seat delete; 'stripper pole' roof brace; MDF lined headlining; Anti-VIBE sound deadening.

TUNING

Forge Motorsport front mounted intercooler; Revo remap.

THANKS

Revo Technik – www.revotechnik.com; Meguiar's UK – www.meguiars.co.uk; Forge Motorsport – www.forgemotorsport.co.uk; Cobra Seats – www.cobraseats.com; VIBE Audio – www.vibeaudio.co.uk.



It's all about the bass, 'bout that bass, no treble! (Well actually there's treble, too)



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**A LOT GOES INTO BUILDING
A SUPERSONIC WORLD
LAND SPEED RECORD CAR,
INCLUDING A SET OF
SAMCO HOSES...**

THE WORLD'S FASTEST CAR *(HOPEFULLY)*



In 2017, Bloodhound SSC (Supersonic Car) will attempt to hit 1,000mph and with it set a new World Land Speed Record that may never be beaten. As the project reaches the final build stage we were invited to take a look around by SamcoSport, who are the official silicone hose supplier to the project.

The sheer amount of science, technology and money (not to mention the size of Andy Green's trouser potatoes – the man who'll be driving the thing) involved in this project is mind-boggling. It's so advanced that the hybrid Nammo rocket that will be used to push it to the 1,000mph target will be used to launch satellites in the foreseeable future. But only after development on Bloodhound! This stuff really is rocket science.

A team of specialists have been put together by project director (and WLSR legend) Richard Noble. It includes ex F1 and aerospace engineers, and their CVs make for such impressive reading that if Adrian Newey applied for a job he'd probably be on tea making duties!

The most surprising thing about all this though, is that amongst the state of the art technologies lie parts and brands that you and I are already familiar with, parts that you'll find amongst modified cars the world over.

For example, the Jaguar V8 that will be used as the rocket's fuel pump – yes, you did read that right – will be using Samco hoses. And the callipers and discs that will bring it to a stop after the parachutes and air brakes have done their thing are from AP Racing. Then there's the suspension springs made by the guys at Eibach.

This WLSR car isn't just relevant to this issue of the magazine because it's the Power Special, but because there are links between the parts used in this project and the one sitting on your drive.

You can bet your bottom dollar that some of the technology used and discovered on this build, not to mention the future engineers it will inspire, will have an effect on the modified car market for years to come. Good times!



Bloodhound The Car



There aren't enough pages in this magazine to list the full specification of this build, so we're just going to mention some of the key parts that will hopefully propel this machine into the history books.

Let's start with the power units. Bloodhound will use a Rolls-Royce EJ 200 jet engine out of a Eurofighter Typhoon to get it moving to a mere 350mph. After this a cluster of three Nammo rockets will kick in to get the car to its target speed.

The system that pumps fuel into the jet itself requires a custom made hose, and the in-house bods at Samco HQ had to work

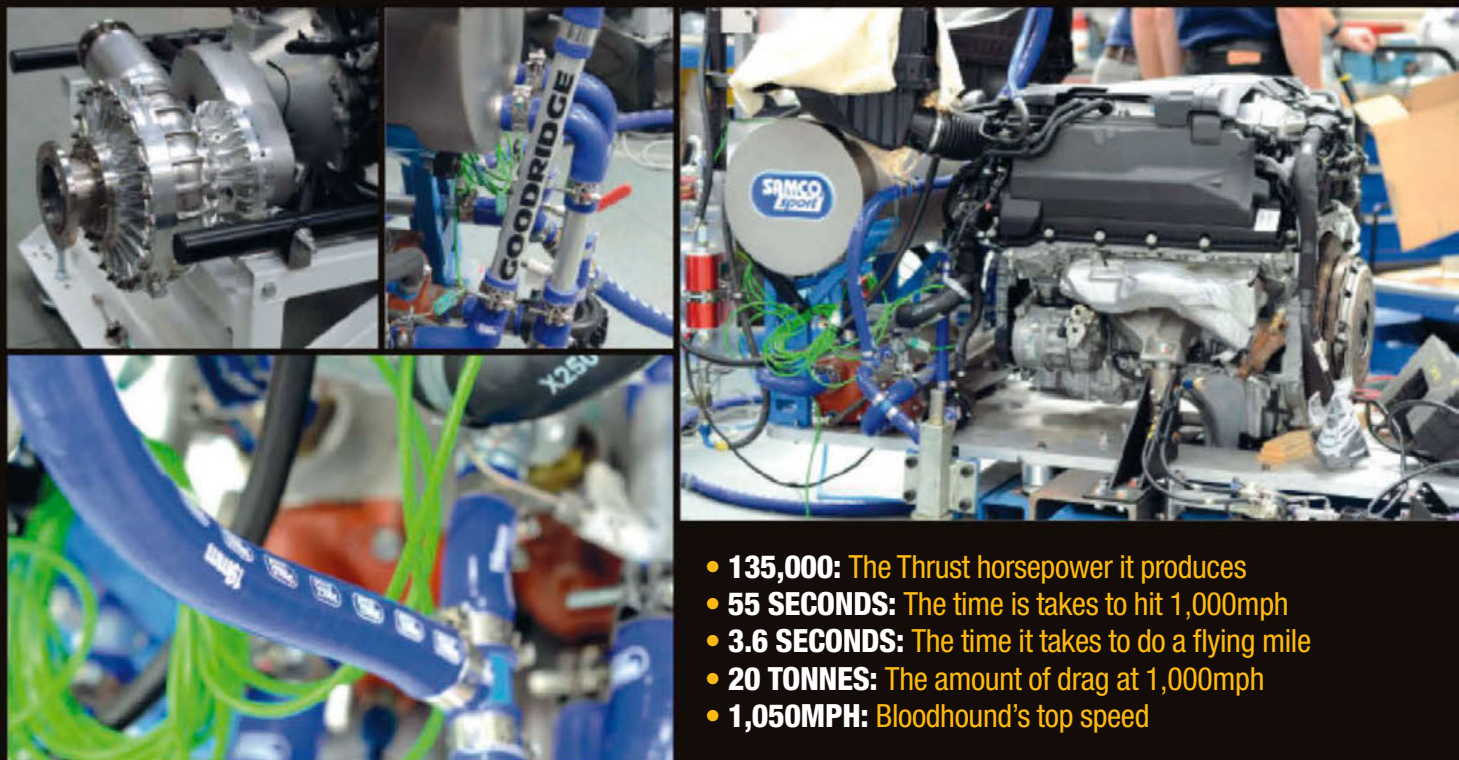
closely with Bloodhound's technicians to ensure that the hoses will handle the extreme temperatures and pressures the car will be under when the jet and rockets kick in and produces 135,000 thrust horsepower.

The front half of Bloodhound is a carbon fibre monocoque like a racing car and the rear end is a metallic framework and panels like an aircraft.

The wheels are forged from solid aluminium and will weigh 95kg per corner, and will be subjected to spin at over 10,000rpm, producing 50,000 of g-force at the wheel rim! The braking system has three main stages

after the throttle cut off. Air brakes will come in at 800mph, below 600mph a parachute will be deployed, and then the wheel brakes will be applied at 160mph. The brake discs will be made from steel, as at 800mph the rotational force is too much for carbon fibre units and they'd just explode!

It's the stopping of the car that is the 'difficult part' of the drive for Andy Green, as the forces applied to his body would cause an untrained person to pass out. Andy will be decelerating at around 3G, which is like going from 60mph to zero in one second! And he'll be experiencing that for 20-seconds!



- **135,000:** The Thrust horsepower it produces
- **55 SECONDS:** The time it takes to hit 1,000mph
- **3.6 SECONDS:** The time it takes to do a flying mile
- **20 TONNES:** The amount of drag at 1,000mph
- **1,050MPH:** Bloodhound's top speed

THE LOCATION

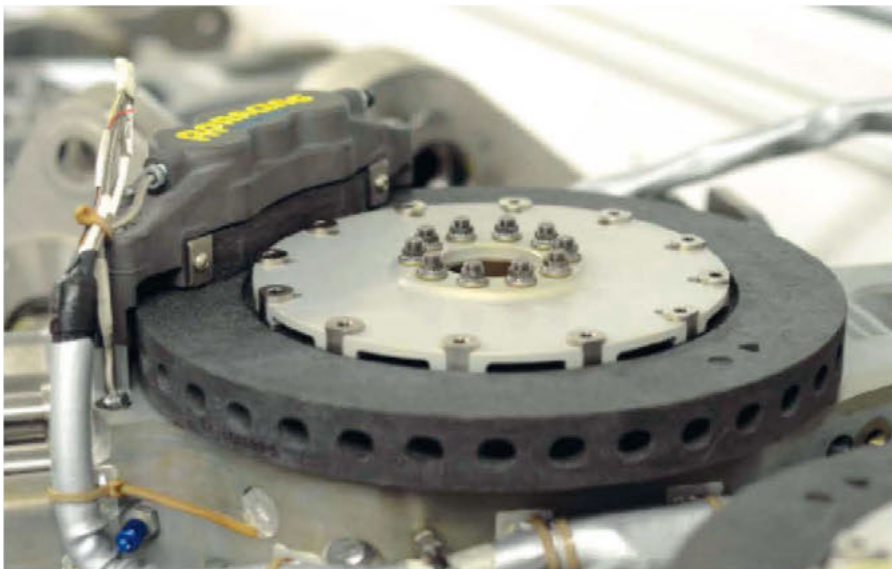
As you can imagine, there's not many places in the world that you can attempt 1,000mph (and have the space to stop). It's not like the Highways Agency will give you permission to use the M1 for a couple of hours.

The selection of the location took time and lots of research. Utah's Salt Flats of Bonneville might have been where legendary British record breaker Sir Malcolm Campbell set his World Land Speed Record (WLSR) back in 1935 – and where it was held right up until 1983, before Richard Noble set a new record at Black Rock Desert in Thrust 2, which achieved 633mph.

Black Rock Desert is an alkali playa surface, which means it's a fine mud surface that's very smooth and firm, but not as hard as the salt of Bonneville, which isn't suitable for a solid metal wheel WLSR car, like Bloodhound.

Richard returned in 1997 with Andy Green at the wheel of Thrust SSC, that went supersonic and averaged 763mph, which is still the land speed record today.

So Black Rock is where Bloodhound will attempt 1,000mph? Well, no. A lack of rain over the last decade and some heavy use by an annual festival has left the surface in bad condition and therefore not suitable for the attempt.



The search for a location continued, a location that needs 12 miles of track, and 0.3 miles of safety area. Not forgetting it needs to be completely flat, consistently hard and have no debris bigger than a pea-sized pebble! So that definitely puts the M1 out of the running then.

The place that has all of the above is Hakskeen Pan, in South Africa. It's smoother than a pool table! There was just the small

matter of clearing 21,500,000 square meters (the same as 3,000 international football pitches) of debris from the desert, but this was taken care of by 317 people over 120 days... by hand!

But what if a rival team wants to use the Pan for their WLSR attempt? Don't worry, Richard and his team have got that covered. Bloodhound SSC has exclusive rights to the Hakskeen Pan until 2018.

The Opposition

THE AUSSIE INVADER 5R

The Invader 5R is basically a rocket on wheels that's reported to be able to go from 0 to 1,000mph in 20 seconds. Perth resident, and long-time WLSR pursuer, Rosco McGlashan, will pilot this thing... rather than me to be honest!



THE YANKS

There's a couple of Land Speed record cars in America, including Fossett LSR which was Thrust SSC's biggest challenger back in the 90s. Since then this car has been thoroughly overhauled and could take Thrust SSC's crown, but can it hit 1,000mph?

The other contender from across the pond is The North American Eagle. This machine started life as a military jet! They've basically cut the wings off and added some wheels. Well okay, it's a lot more advanced than that, but you get the general idea.



What is Mach 1?

In simple terms, Mach 1 refers to the speed of sound in its local medium. Confused? Don't be. Simply put, the speed of sound varies depending on the temperature, altitude and humidity of the air through which the sound is travelling. So the speed of sound isn't a constant and this is why it's referred to as a Mach figure.

MORE SPEED TERMINOLOGIES:

Current World Land Speed Record:..... **763mph**
 Speed of Sound (at sea level):..... **761mph**
 Subsonic:..... **609mph**
 Transonic:**609-914mph**
 Supersonic:.....**915-3,806mph**



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OTHER WORLD LAND SPEED RECORDS

Diesel-powered:.....**350mph, JCB Diesel Max**
 Electric-powered: **307mph, Buckeye Bullet 2.5**
 Human-powered bike: **83mph, VeloX3**
 On Ice: **260mph, Audi RS6**
 Radio-controlled car: **202mph, RC Bullet**



Thanks
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RUNNING IN THE FAMILY

STEVE'S FIRE-SPITTING MONSTER OF A 350Z IS ONE OF THE FASTEST IN THE COUNTRY, THANKS TO A BRUTAL TWIN-TURBO CONVERSION. OH, AND A LITTLE HELP FROM HIS KIDS, OF COURSE...



They say you can learn a lot from your children. Whether it's to relax more or perhaps spend less time working, your beloved offspring are sure to add some invaluable insights to your own life. For seasoned car fanatic Steve here, though, the most important message his sons offered him was simple: add more boost!

It all started when our company director and father of four here got the itch for a Porsche after owning a long list of sporty beasts during his youth. Without the funds to scratch it with the low-mileage example he was after, his attention was soon drawn

to the Nissan you see here – at the time a one-year-old minter in that seductive black, which only helps bring out the coupe's gorgeous lines.

Being the family man that he is, Steve initially planned to enjoy the fully respectable V6-powered sports car in the standard state of affairs that Nissan had always intended. But, as you've probably gathered by now, this strategy was very quickly thrown out of the window. "I had no plans to mod the car until my son Jamie bought a Civic Type-R and started tuning it. So off I sent my car to be tuned to Stage 3!" Steve recalls. This level of tweaking consists of a new





exhaust system and a remap being added into the mix, drawing in a not-to-be-frowned-upon 340bhp.

Things were going swimmingly then, as Steve and Jamie, along with Steve's other son Ryan, began attending car shows and meets to show off the fruits of their labours while picking up modifying tips from others in the scene along the way. It was only when Ryan picked up an Astra VXR Nurburgring and began playing with the boost that Steve once again thought it was time to step it up a notch with his 350.

The last thing a proud dad wants is to be shown up by their son, right?! 'A friend of mine with an Evo told me about Norris

Designs, a tuning house that specialises in boost," says Steve. "Before I knew it, I'd booked my car in for a twin turbo conversion." That's one way to deal with a shortage of power!

With the car signed up for the 'full works', Norris Designs got cracking with enhancing almost every aspect of the Z's performance. Starting with a fully forged, balanced and blueprinted 'ND' V6 engine with all the internal trimmings you could imagine, the team were ready to bolt on a pair of Garrett GT2860R ball-bearing turbos, complete with TiAL Vband housings. To run smoothly, these puppies needed gorgeous custom tubular exhaust manifolds, elbows and



Cusco cage is a work of art



Spoiler alert indeed

Norris Designs know a thing or two about tuning



Y-pipes, not to mention a full 4-inch exhaust system. Not a problem for the boys at Norris though, who soon whipped up some tasty bespoke parts to ensure as many horses as possible could be squeezed smoothly and reliably from the lump.

By adding two whopping boost snails in under the bonnet, a lot of the mechanical setup was going to have to change to match the new-found power. This meant stuff like a custom hydro-electric power steering system, uprated intercooler and radiators and a MoTeC M600 'Gold Box' ECU were all wedged in and fettled to work in the 350Z while the car was still in the garage. Oh, and a completely re-worked suspension setup consisting of the very best TEIN coilovers and new suspension arms, of course!

While this rather colossal amount of work was being carried out, Steve and Ryan got busy looking into how to make the car look a little more sinister. "Ryan had a lot of input into the looks of the car," Steve admits to us. A wise move, Steve, as it's always good to get a hip youngster's opinion in the styling department! The functional-yet-jaw-dropping image that's resulted, comes courtesy of a frankly staggering set of super-wide Rota rims housed in some sumptuous stretched arches, along with a whole house of aero goodies adorning the car. We're not sure whether it's the APR rear wing, INGS side skirts or the custom cut-out front grille that does it for us, but all



We bet this spits flames






See you at the bar

of them together act as clues that would almost certainly stop you from attempting to drag race this animal at the lights.

With the car now complete and around 650bhp at Steve's disposal (with much more power in the pipeline once he upgrades the diff!), his so-far short amount of time spent with the boosted beauty has been as hilariously fast and fun as you'd imagine. "There's been a few funny moments already," he laughs. "I turned the traction control off out of curiosity and attempted

to go around a corner, but instead just span on the spot!"

If you glance over the work that's gone into this car in the Tech Spec (right), you'll get an idea of just how much fun Steve's Nissan must be to drive. By covering all bases, he's left with a truly capable car, meaning he's free to crank the boost as much as he dares. Which means this rocket is only going to get faster... And he's got his sons to thank for getting the ball rolling in the first place. 

STYLING:

Custom cut-out front grille; Ford Focus RS bonnet vents; Ings side skirts and rear bumper; APR rear wing; Stillen roof spoiler; Duraflex boot spoiler; carbon fibre front canards; 40mm stretched rear arches, blacked out door handles and badges.

CHASSIS:

10x18" (front) and 12x18" (rear) Rota GTR alloy wheels; Toyo R888 semi-slick tyres; Norris Designs custom hydro-electric power steering system; TEIN Monoflex coilovers with EDFC controller; camber-adjustable upper camber control arms; Eibach front and rear anti-roll bars; full Norris Designs geometry setup; AP Racing 362mm front discs with 6-pot callipers; AP Racing 320mm rear discs with 4-pot callipers.

TUNING

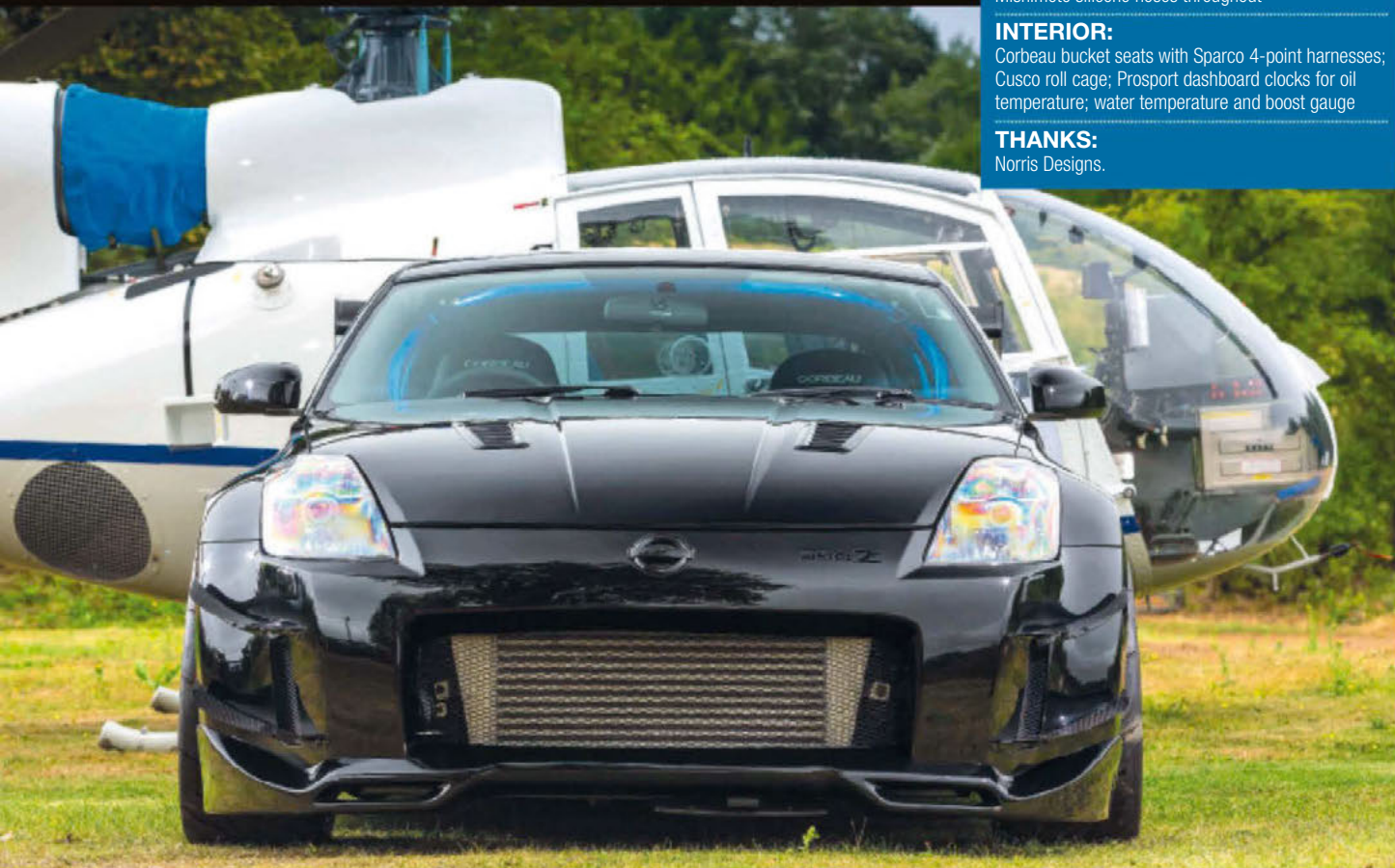
Norris Designs 'ND' forged 3.5 V6 engine; HKS Stopper-Type head gaskets; Manley I-Beam con rods; Norris Designs custom JE forged pistons; ARP head and main studs; Norris Designs uprated valve spring kit; Norris Designs refreshed and lightly ported cylinder heads; balanced and blueprinted sump throughout; large capacity oil sump; Norris Designs custom twin-turbo setup featuring 2x Garrett GT2860R ball-bearing turbos with TiAL Vband housings; twin Precision 46mm external wastegates; custom tubular exhaust manifolds; Norris Designs custom 3in turbo elbows; Norris Designs custom twin 3in Y-pipe; Norris Designs 4in exhaust system; Norris Designs custom turbo inlets with K&N air filters; MoTeC M600 'Gold Box' ECU; Norris Designs custom adaptor harness; Norris Designs 3-bar map sensor and air temp sensor; Norris Designs custom MoTeC boost control system and traction control system; 6x Injector Dynamics 1,000cc fuel injectors; custom Norris Designs in-tank 450L fuel pump; billet fuel rails HKS Long-Reach iridium spark plugs; TOMEI adjustable fuel pressure regulator; Norris Designs 925bhp-rated custom intercooler and pipework; Mishimoto aluminium radiator with twin fans; uprated cooling fans on air con radiator; Norris Designs custom pressurised water system with block bleeds; Mishimoto silicone hoses throughout

INTERIOR:

Corbeau bucket seats with Sparco 4-point harnesses; Cusco roll cage; ProSport dashboard clocks for oil temperature; water temperature and boost gauge

THANKS:

Norris Designs.



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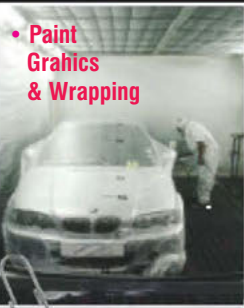
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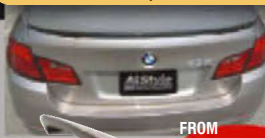
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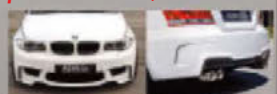
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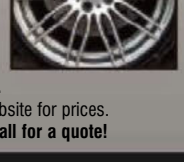
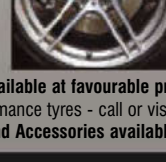
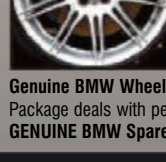
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M.I.V.W 12

FAMED FOR THE STRANGEST NAME IN THE SHOW CALENDAR AND AWESOME VW SHOW CARS, MEN IN VOLKSWAGEN WAS ONCE AGAIN AN ABSOLUTE BLAST

At the height of show season there's at least one show on every weekend and unless you've got a Teleporter built into your install or more spare cash than Dan Bilzerian, it's pretty much impossible to attend them all. This means some hard decisions have to be made on which ones to attend. But if you're a VAG nut, one show that is always at the top of the European show list is Men In Volkswagen, in Valkenburg, Holland.

Lots of shows these days just revolve around the cars. This is no bad thing as that's obviously what we are all into. M.I.V.W has that too, but it also has a cool location in a former Marine air base and a social aspect that extends to the show having its own official hotel. The show organisers, Rob Heldens and Emiel Kooistra, wanted it to be as much about the cars as enjoying a pint with the people who built them in the hotel bar afterwards.

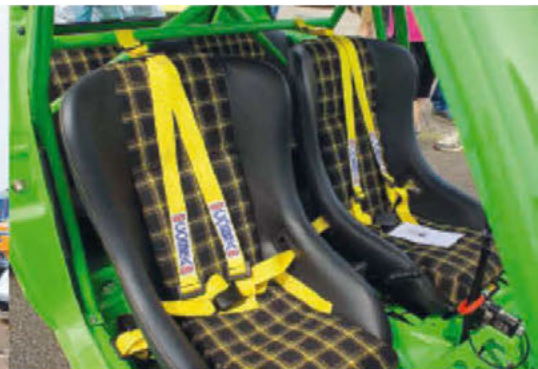
For the first time in its 12-year history M.I.V.W was held on a Saturday, and as Valkenburg Airfield's gates opened at 9am, 2,500 cars made their way into the show.

As the name suggests, the majority of the cars were from the VAG contingent, but exceptions were made for other top-quality German rides. Oh, and of course women were allowed in too.

During the day show car owners could drive onto the purpose-built stage and present their car to the public, while being

interviewed about their build. There was also a dedicated trade area and because the show is run from the gate money alone, there is no need for financial support from the event sponsors. So instead, the sponsors pass this saving on by taking care of the trophies and doing free giveaways on the gate – which is a really nice touch!



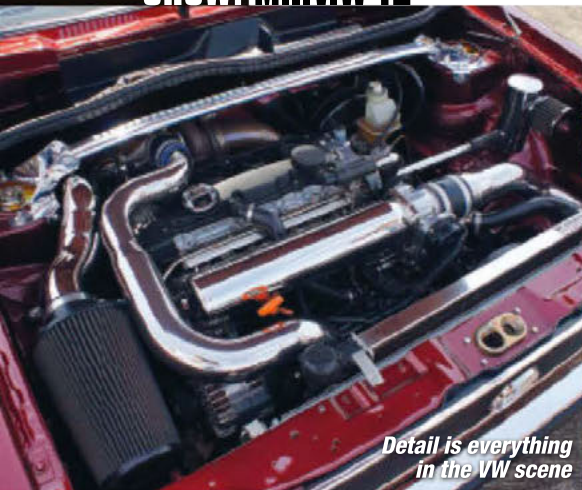


Issue 359's cover car,
Kevve's epic E30



Centre-locks FTW

SHOW: M.I.V.W 12



*Detail is everything
in the VW scene*



*Stunning 964 is on
our WANT list*



*Colour coded cage and
air tank is a nice touch*



Slammed old-skool Jetta

AND THE WINNERS ARE...

This year's event boasted a Top 20, Top Three Best of Show and some sponsor awards. Best of show went to Heiko Borchardt for his amazing Mk1 Golf Swallowtail (right) with its throttle bodied 20v engine. This narrowly saw off Jörg Ballermann's smoothed and chromed Oettinger Mk1.



Heiko Borchardt's immaculate Mk1



Special wheels for a special Cayman



Top trump-ets





Well, you wouldn't lose it in a car park

So many mint Mk1s...



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We're loving the colour combo on this TT



HAPPY CAMPERS

The M.I.V.W show doesn't just take over the Valkenburg Airfield, it also takes over the NH Hotel Leeuwenhorst in Noordwijkerhout. With so many people attending from different parts of Europe, the M.I.V.W crew struck a deal with a local hotel to make it the official accommodation and is exclusively available to M.I.V.W guests on the event weekend. With secure parking, indoor and outdoor pools and a bowling alley all on site there's no better place to rest your feet after hitting the show hard. To put the size of the event into perspective, NH Hotel has 513 rooms, all of which were fully booked!



SHOW: M.I.V.W 12



That's what you call fitment



VW 181, also known as a VW Thing. True story



NEXT YEAR

The dates for 2016's event haven't been announced yet, but M.I.V.W is traditionally held around the beginning of August, so keep those weekends free. Entrance is just 15 euros per car and driver, plus another fiver for each additional passenger. For more info hit up www.mivw.nl.

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Performance Silicone Hose Kits

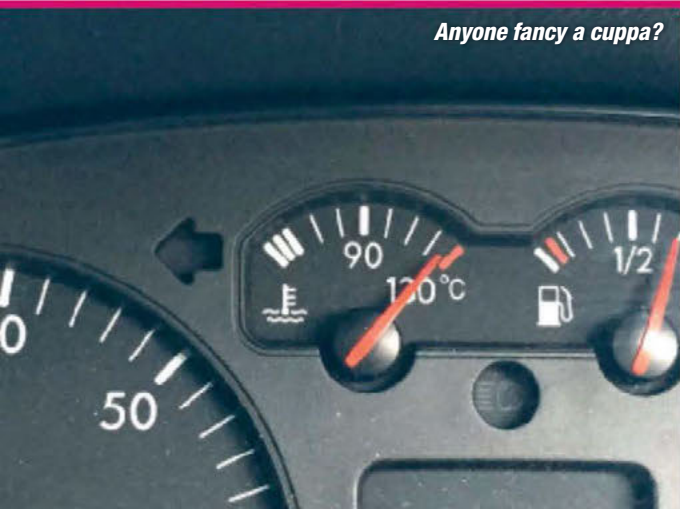
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	<p>MIDGE'S VW GOLF GTI P92</p> <p>Midge finds himself in hot water, or at least his Golf does...</p> <p>Start Never Finished</p> <p>MAIN MODS: ROTA RIMS • AP COILOVERS • MILLTEK EXHAUST • KENWOOD AUDIO • WRAP • BOOSTER CUSHION</p>	
	<p>SLIM JULES' BMW 335i P95</p> <p>The Bimmer build is about to get even more serious. Anyone know a loan shark?</p> <p>Start Never Finished</p> <p>MAIN MODS: ADVAN TYRES • DIPPED INTERIOR • 3SDMS • HYBRID TURBOS • MILLTEK EXHAUST • FORGE FMIC</p>	
	<p>MARK'S MAZDA RX-7 P96</p> <p>Mark told us he's treated the RX to a new coat. Good job, as it's almost winter. Brrrr.</p> <p>Start Never Finished</p> <p>MAIN MODS: ROTA OPTION RIMS • CONTINENTAL TYRES • HKS T51R SINGLE TURBO CONVERSION</p>	
	<p>JAPFEST'S SUBARU IMPREZA P98</p> <p>The Scooby gets a clean bill of health just in time for its new owner.</p> <p>Start Never Finished</p> <p>MAIN MODS: ROTA TITAN WHEELS • TOYO PROXES RUBBER • BC RACING COILOVERS • KENWOOD AUDIO</p>	

Anyone fancy a cuppa?



It's got less teeth than Midge himself



Midge gets to drive a proper car

That'll be the problem then...



MIDGE'S GOLF GTI



OH NO - HE'S ONLY GONE AND BROKEN ANOTHER 1.8T!

You haven't seen the magical green Golf in Projects for a while and that's probably because I've been far too busy enjoying tooling it around every day. I have to admit I've not done a whole load of notable mods thus far, so, this month, I decided it was high time I cracked on with stage one of the basic tuning. First up, one of the simplest bhp hikes ever - replacing the standard downpipe with this awesome two-piece job from Euro car specialists Direnza. This stainless steel, turbo-back beauty is an absolute bargain at under 120-quid and should help free up quite a few horses - especially with my Milltek exhaust bolted on the back.

Anyway, instead of fitting it as soon as it turned up like I probably should have, I

decided a beer and curry with Jules in the West Country was far more important. But, after a great weekend on the sauce, when it was time to get back to sunny Dartford, I didn't get very far before the Golf started overheating. Badly.

Now, after limping back to the big man's house, checking everything from the fans to the rad, and fitting a new thermostat just in case (you never know, sometimes you get lucky), there could only be one thing left - the water pump.

Seasoned 1.8T owners will know that failure is a common problem. The older OEM pumps have a plastic impeller that often smashes itself to bits and won't circulate the coolant properly. The only known cure is a new pump with a metal

impeller but, the trouble on a 1.8T is, it's a cambelt-off job and to do that you need to drop the engine off one of the mounts and... well, let's just say it's not something you can do on the side of the road 150-miles away from your toolbox and jack.

As a stroke of luck though, until very recently I lived in the Wild West, so I knew exactly where to take the little green monster. Suffice to say Paul and the boys at Westbury Tyre and MoT Centre were immensely chuffed to see the broken VW turn up. They haven't had it taking up room in their workshop for at least 4-months since Jules owned it and broke it himself!

They confirmed my fears, booked it in and even lent me their rather fetching 1.4 Clio courtesy car, complete with

Tansy Love Wheels, for a few days. If I had any street cred in the South East before (you didn't - Jules) I probably haven't now.

As it turns out, it's bloody lucky I had these guys to save the day by sorting out yet another FC shitter. Along the way they found that my crank pulley had teeth missing and the cambelt was starting to rip itself apart. In other words, a few more miles would have seen the belt slipping or snapping completely and one short bloke looking for a whole new engine. I'll be honest, if the water pump hadn't gone I'd be driving around in a ticking time bomb and I'd never have noticed until it popped. After the dead engine in the TT last year, that's something I can really do without.

So it's been an interesting



Westbury Tyre & MoT; the saviour of many an FC project

month that's made me realise just how awesome Paul and his guys are, not to mention how well they've looked after us FC monkeys over the years. Sadly for them, we all know I'll be back.

There's been a bit of another realisation too. I hate to say it but, my 1999 Golf is getting a bit long in the tooth. I know it's solid now the Westbury crew have been on the case but, as for tuning it, there's still a few questions running through my mind.

Do I spend a load of cash now it's got over 140k on the clock? Do I start looking for another Golf that's lived less

of a hard life? Or maybe I need a different 1.8T project all together? I'm gonna have to make a decision soon - it's

not in my nature to hold off the modding this long... especially with new parts sitting there in the garage.



THIS MONTH

PARTS

Downpipe £119.00
Golf cambelt and waterpump .£340

Total£459

Contacts

Westbury Tyre and MOT Centre
www.westburytyremot.co.uk
Direnza
www.direnza.co.uk

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Reverse lip: Right
Stepped lip: Below



The BM won't look like this for much longer

So new they haven't been made yet



JULES' BMW 335i



THE CALM BEFORE THE STORM...

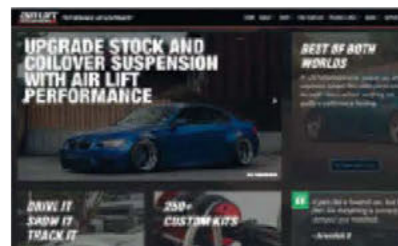
With putting this mag together, going on numerous photo shoots and hitting a few shows (and some golf balls - Midge), I just haven't had time to do any physical modifications to the car. This might sound like a bad thing but to be honest, I've had a great month enjoying the car and its newfound performance... and that's what's all about!

Although I haven't actually done any work on the car (apart from taking it to the local car wash, and that doesn't count) that doesn't mean I haven't thought about the next modifications on my hit list. In fact, it has been quite a month of planning and the car's spec is about to

go off... BIG TIME.

The plan is to do a mad 5-day build before the Players Show at North Weald on the 20th of September. Meaning by the time you read this the car will be sitting on a set of VAD wheels made by Avant Garde - the first of their kind in the WORLD, ridding on Air Lift suspension and looking a whole lot more awesome.

As you know, I don't mind getting my hands dirty but to turn this build around in time for the big reveal, I've decided to enlist the help of the UK's most respected air, retrim and audio installers; Plush Automotive. Good times ahead. Anyway, anyone know where I can get a loan...



THIS MONTH

PARTS
I'm saving up ££££
Total £Lots

Contacts
www.plush-automotive.co.uk
www.vadwheels.com
www.airliftperformance.com

THIS MONTH

Shit's about to get real!



Greg Howell = paint perfection



MARK'S MAZDA RX-7



REASSEMBLY OF THE BEAST BEGINS

They say a modified car project is never truly finished, but right now – in a workshop just outside of Coventry – my RX-7 is beginning to look like a proper car for the first time in nearly a year.

To say it's undergone a bit of a transformation is a hell of an understatement. Originally booked in @ Greg Howell's for a rear arch repair, the RX-7 soon spiralled out of control when I turned up with a 13-piece RE Amemiya bodykit. Unfortunately I'm not what you'd call mechanically minded... and after test fitting the kit it was going to be a MASSIVE job to fit and paint to a super high standard. What's more, I'd also gone off the RE Amemiya style a bit. So the decision was made to go for something still wide arch, but a bit more subtle.

In the end I opted for a set of FEED (Fujita Engineering) front and rear wide arches,

flaring the standard RX-7 arches by 25mm each side for extra wheel clearance and a much more aggressive look. The good thing about the FEED arches is they follow the standard RX-7 bodylines rather than completely changing the whole look of the car. In addition to the arches, a set of FEED side steps were fitted in place of bulky side skirts and an OEM 99-spec front bumper and splitter. Good times.

Quality over quantity was the new goal. Greg's notorious for his attention to detail with his paintwork and skills usually being used on classic car restoration and Porsches, so a turbo Japanese motor with fibreglass arches was going to be a bit of a challenge. Undeterred, Greg put in hour after hour on the RX-7's bodywork, getting each part aligned perfectly before

prepping the paint for a spotless respray.

The end result is properly stunning. I can safely say I've never owned a car with bodywork finished to a standard this high... ever! The blend of FEED wide arches and stock bumpers make the RX-7 look pretty evil without looking over the top, and the shine on the paint over every

panel is incredible.

With mopping, polishing and a few last tweaks to finish it won't be long until the RX-7 is back out on the road. It's going to be a painful day when it gets its first stone chip...

To keep up to date and see more of the RX-7 build @mark_scenemedia on Instagram. More next month.



Mark can see the light at the end of the tunnel



Under wraps



FEED arches work a treat



THIS MONTH

PARTS

4 x Rays Engineering Gram Light
57DR 10.5x18in ET22 POA

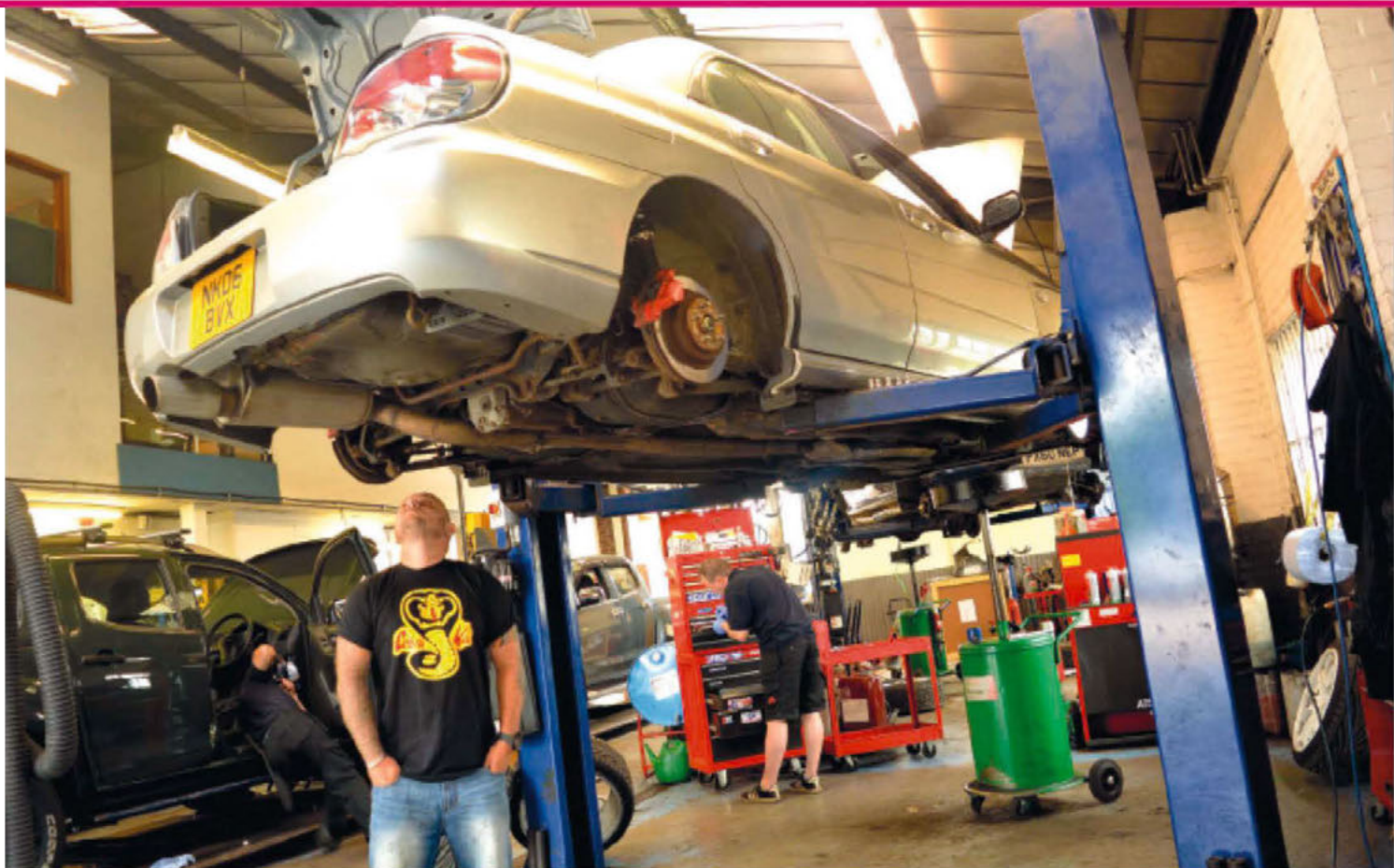
Total £POA

Contacts

Built Not Bought Automotive -
builtnotboughtauto.com
Greg Howell
greghowell.co.uk
01926 813676

NEXT MONTH

With the exterior looking perfect, it's
time for a much-needed overhaul
on the RX-7's interior.



JAPFEST'S *SCOOPY WRX*



NOW THAT'S WHAT I CALL (A) SERVICE!

By the time you read this the Scooby will have been given away to one lucky punter at Japfest 2 and, it has to be said, we're very proud of the car we've put together. In fact, with the top-notch audio, suspension and wheels, it's got to be one of the best bases for a future project ever, and it's free - how sweet is that?

Anyway, we've had a blast in this one, quite literally, but there was one last thing to do and that's make sure the service book is up to date and everything's bang on for the new owner. Now, of course we could have changed the oil and checked it over ourselves (everyone on FC is a qualified mechanic, don't ya know) but sometimes it's far better to get a specialist who deals with these cars day-in and day-out to make sure everything is safe and as it should be. What we needed was an official Subaru dealer but one that understands the

ins and outs of modifying, luckily we knew exactly where to go. The Scooby specialists in question are called Unity Automotive and it wasn't long before we found ourselves heading up to their base camp at Cross Roads Garage in Warwickshire.

Now, these fellas have been working on Japan's finest for just about forever and there's no one more qualified to fettle with your Scooby. They've even had massive success in Time Attack over the last few years with their own race car, so we knew our WRX was in expert hands.

Now, believe me when I say, their mechanics are about as thorough as it gets, they went over this one with the finest of fine tooth combs. As it turns out our WRX was in impressive shape too, the serious multi-point inspection only turned up a few things that needed addressing but none so serious that they couldn't be sorted there and

then. After that came a full service and fluid change giving the Subaru a clean bill of health - I barely had time for my cuppa to get cold!

You can't argue with the customer service here either, yes they made the tea, but they also explained everything clearly without trying to sell us more than we wanted. That's not to say I didn't nearly come home with my own 10-plate STI - they've got some serious motors on sale here, too!

I guess, in the modified car world, many main dealers get a bad rap. Sometimes it's justified because they scoff at anything that deviates from OEM but that's not always the case. Here these guys absolutely relish the chance to work on something a bit different from the norm.

What you also get is people looking after your pride and joy who are car nuts themselves. They know the score, they respect what

you've put into your project and you can't really ask more than that, can you? The price was much more reasonable than we expected from a dealer too. An all round winner and no mistake.





The automotive equivalent of a heart surgeon



THIS MONTH

PARTS

Full service from £199

Total £199

Contacts

Unity Automotive Tredington
www.unityautomotive.co.uk

Readers' Rides



CHRIS PARKER'S SKYLINE

FC Says: You're just not a proper tuning nut if you don't get fizzy trousers when seeing those legendary quad rear clusters, it's just the way it is. End of.
Yes, if there's one universal truth in the car world it's that you can't go wrong with a bit of Skyline action, so Chris Parker is indeed a man after our own hearts.

R32 GTS-ts are getting a bit thin on the ground in 2015, so top marks to Chris for keeping this one nicely modded and in top-notch condition. It's bonkers to think this particular classic first hit the Japanese streets way back in 1988 – plenty of you guys weren't even born then! An absolute retro stunner and no mistake.

TECHSPEC NISSAN SKYLINE TOP MODS:

Staggered Rota Grid Drift alloys; Tein coilovers; MOMO steering wheel; Apexi induction kit; de-cat exhaust; Forge dump valve; front and rear strut braces.



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TOM HUGHES' RENAULT 5

FC Says: Blimey, you don't see many of these outside the scrappy nowadays, I've certainly never seen one in this state of mintness and I'm not actually all that sure these were that clean from the factory! Apparently this old skool R5 Campus has only got 34K on the clock too... which is probably about how far Tom has had to drive to find all the old skool parts needed to keep it in this condition. We love the fact that Tom here has, what he calls 'gently modified' this petit rolling classic, keeping everything nice and subtle while staying true to the original R5 platform. Some seriously nice, not to mention respectful, work right there.



TECHSPEC

RENAULT 5

TOP MODS:

Scorpion exhaust; Japan Racing alloys; R5 GTT suspension and steering wheel; GT red carpet; Pioneer headunit and speakers, Renault Clio Williams brakes.



RYAN EVANS' POLO

FC Says: Got any camber mate? Christ alive, this one appears to be madder than a three legged dog trying to bury a turd on a frozen lake! Big props to Ryan for thoroughly sorting his Polo with some seriously high-end goodies like air ride and one-off image hoops, but still using it as a daily driver - loving your style mate. One thing we wasn't expecting from such a lovingly painted stunner though, was the ballistic GTI engine conversion or the fact that he's also gone to town on the tuning mods. No wonder he wants to razz the titties off it every day - we would too! Nice one.



TECHSPEC

VW POLO

TOP MODS:

Resprayed in Sepang Bronze; front recess, head light washers, tailgate and aerial smoothed; 4-way manual air ride system; one off Image 3-piece wheels; GTI engine conversion; polished and ported head; 4-2-1 race manifold; retrimmed Mk5 R32 seats with rear bench trimmed to match; MOMO wheel.

Readers' Rides



JOHN LINDSEY'S FIESTA

FC Says: It's not just the larger-sized German contingent that looks the absolute plums on a set of 3SDM 0.05s, John's frisky Fiesta almost makes us think they were designed specifically for one of these. It's a seriously refreshing wheel choice for uncle Henry's favourite little hatch and, complemented by a host of other

styling mods, it's 100-percent guaranteed to turn heads. Like any nu-skool hatch even the base model Mk7 is still a fair old chunk of change but, when they look this good, it has to be worth the daily grind right? A thoroughly well-deserved doff of the FC cap to you Sir.

TECHSPEC

FORD FIESTA

TOP MODS:

Eibach springs; pressed plates; wind deflectors; Scott Wilson Racing styling kit; 3SDM 0.05 wheels; Pipercross induction kit; Sportex exhaust system; Zetec S seats; black dash.



STEWART THORNE'S CORSA

FC Says: With a spec-sheet as long as a donkey's dong (we can't even fit it all in here) and 265-horses dying to get out from under the bonnet this thing must shift faster than a nun's first vinaldoo! It's also pretty unusual to see a heavily tuned 1.8-turbo Corsa on our shores so, no doubt, that makes it all the more surprising when your big performance motor gets pissed on by this miniature griffin-badged terror. We've seen hundreds of modified Corsa Cs over the years, very rarely are they as good, or as quick, as this one. That's not an easy trick to pull off Stewart, but you've done it with bells on.



TECHSPEC

VAUXHALL CORSA

TOP MODS:

7x16 Compomotive M05 alloys; Toyo Proxes T1R tyres; Gaz coilovers; Astra GSi brakes; Stack boost and oil pressure gauges; smoked facelift headlights; fully forged engine with ARP rod and headbolts; GT28 turbo; custom manifold; Dbilas inlet manifold; Mocal oil cooler; Corsa VXR intercooler; uprated injectors; Powerflow custom exhaust; Quaife diff; Helix paddle clutch; billet flywheel; custom Rabbid map; Audi TT leather seats.

SHOW US WHAT YOU'VE GOT!

Here's your chance to show off both your ride and your photography skills in the pages of *FC*. To enter your car just open a fresh new email, put 'Readers' Rides Submission' in the subject line and send us a few pics of the best bits (larger than 1MB with no ghosting or logos, and you must have the photographer's permission) along with a short spec and a paragraph telling us why your motor deserves to adorn these hallowed pages. Pop the whole lot over to jules.truss@kelseymedia.co.uk and we'll do the rest.

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DELIVERY VAN IS ONE PACKAGE WE'D LOVE TO SIGN FOR!***



Our mate Ruud Janssen has dedicated the last 10 years of his life to not just rebuilding but reinventing his classic Type 147. "What the fudge is a Type 147?" Well let me tell you. Nicknamed the Fridolin, the Type 147 Kleinlieferwagen (little van) started production in 1964 as a German delivery van. The van was made up from various VW parts including, Beetles and VW transporters. It rolled out of the factory with an air-cooled 1,200cc lump that pushed out a devastating 35bhp. It's a rare beast too, with only around 200 Fridolins left out of the 6,139 that

were built. If you managed to find one, you'd be mental to do anything but restore it to its original spec, right?

The van was hanging when Ruud found it. The complete front end was missing, along with the rear axle. Ruud is a mechanic by trade though, so a few major parts missing here and there was never going to put him off!

However, the project went backwards before it could go forward. Everything that was still intact was stripped down. If it was too rusty or damaged beyond repair, then it was chucked in the bin and replaced with new parts. Unfortunately you can't just log onto eBay and pick up parts for a 1969 model Fridolin. Instead most of the parts were hand made by Ruud himself using



“My mum says, ‘If you’ve got it, flaunt it’, and that’s what Ruud’s done here”



sheet metal. Both front and rear bumpers have had their brackets removed so they sit flush with the body of the van. The rear lights have been swapped out for older Type 1 bus lights. Other than that the exterior remains as VW intended, small and boxy!

For the engine, Ruud had big plans, but first he'd have to prep the chassis. The only way the van would be able to cope with big power was to replace the entire chassis with a strong lightweight tube frame version. Days were spent welding the frame together to make it strong but keep it lightweight – much like myself!

The front axle is created from a cocktail of VW, Opel, Ford and Audi parts. The suspension itself uses a three-way adjustable coilovers with pushrod system. It looks the bollocks too, the coilovers run vertically under the bonnet either side of a well-placed race spec fuel tank and a pair of QSP fuel pumps. The rear setup is just as mind-blowing as the front and uses double A-frame wishbones and parts from an Audi A6 4motion.

The combo of tubular frame chassis and well-engineered axle and suspension system meant the van had the perfect foundations on which to build upon, and build Ruud did!

The 1.2 air-cooled engine was gone for good. Replacing it is a monster 12 cylinder, 6.0 litre engine taken straight out of a W12 VW Touareg. A custom made flywheel was added along with twin carbon air filters, an oil cooler and a custom fuel pressure regulator. The engine is married up to a six-speed gearbox from an Audi A6

and combined with a Tilton hydraulic three-plate clutch, good for plenty of power! Making sure that new lump doesn't get cooked is a pair of aluminium radiators with four spall fans – smart move. As my mum says, “If you’ve got it, flaunt it” and that’s exactly what Ruud has done with that beautiful W12 lump. The engine is boxed in directly behind the passenger and driver seats. The lid of the box has its own clear Perspex window for your viewing pleasure. Talking of pleasure, this little van now packs enough power to turn





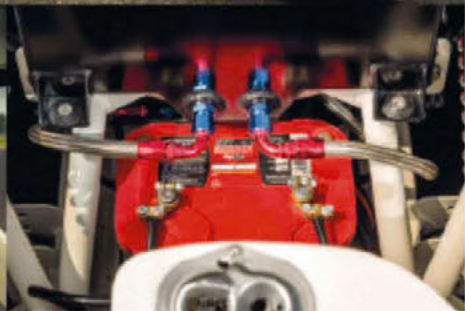
*A 12 cylinder, 6.0 litre engine
– from a W12 VW Touareg*

*Right: the legend
states 'Yes I'm still
married'*



W12

The engine that now lives in the Fridolin has been donated from a VW Touareg and tuned to 450bhp. Despite its fat 2,542kg arse the Touareg has no problem hitting 60 in just under 6 seconds. In comparison the Fridolin weighs 935kg in original form. If our maths are correct we have come to the conclusion that low weight + high power = happy times!



RUUD JANSSEN

Hi mate, I ordered some stuff off Amazon a while back and it's still not arrived?

"Right, and why are you telling me?"

Well you've got the fastest delivery van on planet Earth right?

"Yeah, but I'm not a delivery driver!"

But you drive a delivery van...

"You've got a laptop with Word on it, but that doesn't make you a writer."

How rude. And to think I said such nice things about you!

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inside as out*

WILD CARD: TYPE 147 KLEINLIEFERWAGEN



your face inside out! A staggering 450bhp with 443lbs of torque now surges through this old classic!

Needless to say, the standard brakes would have curled up and died at the thought of bringing the Fridolin's new found power to a stop. For safety reasons they have been suitably upgraded! Both front and rear brakes have been replaced with 390mm two-piece brake discs and combined with Brembo six-piston callipers at the front, and four-piston callipers on the rear – plenty of stopping power to bring the Fridolin back under control. The callipers have been painted yellow and finished off with the Deutsche Bundespost (German Post Federation) logo, a nice little detail.

When it came to sorting the van out with a set of hoops, Ruud went large. A set of polished 8x20-inch Model Torq Thrust 2 wheels have been wrapped in stretchy 225/30x20 Nankang tyres.

Despite their size the Fridolin has no problems gobbling the wheels up into the arches and tucking them away.

The interior has been kept clean and simple. The back of the van that was usually reserved for parcels is now filled with that big 6.0 litre W12 lump. Quick release catches have been used on the panels around the engine to give quick access should anything go pear shaped. It's up front where all the fun happens though. A pair of Recaro Pro-Racer seats have been mounted on custom built runners and wrapped with Simpson harnesses that pin Ruud and his chosen victim in place. A custom control panel has been fitted to the dash and houses a row of switches and buttons that would look more at home in a Bond car than that of an old delivery van! Even the pedal set on this van is custom made using three hydraulic cylinders. You'll also notice that there's not a stitch of carpet in sight. Everything is raw and focused purely on the driving experience of the fettled Fridolin.

Some purists may say that Ruud has ruined a classic. We say, can we have a go...NOW!? 🏁



The interior is all about the driving experience



TECH SPEC: FRIDOLIN

TUNING:

6.0-litre W12 VW Touareg engine; custom-made fly wheel; twin carbon air filters; oil cooler; fuel pressure regulator; 6-speed Audi A6 gearbox; Tilton hydraulic three-plate clutch; custom Magnaflow exhaust system; 4x radiators; 4x spall fans.

CHASSIS:

Tube frame chassis; custom front and rear axles; front and rear A-frame wishbones; 3-way adjustable coilovers with pushrod system; 390mm two-piece brake discs; Brembo 6-piston callipers front and 4-piston rears; Audi R8 handbrake callipers; 8x20in Model Torq Thrust 2 wheels; 225/30x20 Nankang tyres.

EXTERIOR:

Complete body restoration; Type 1 rear lights; body flushed; front and rear colour coded bumpers; full respray in white with dark roof.

INTERIOR:

Fully stripped; Recaro Pro-Racer seats; Autometer Pro-Comp tachometer; water and oil temperature gauges; MOMO Drift steering wheel; custom pedal set with three hydraulic cylinders; racing handbrake and gear shift; custom made roll cage.

History lesson

Back in the mid to late 60s the Fridolin was perfectly suited as a delivery van. With its simple engine and readily available VW parts, it was easy to fix and cheap to run. Ruud has binned that off by adding a stonking great motor and dropping it on its arse! And that is just the way we like it!



Polished 8x20-inch Model Torq Thrust 2 wheels, wrapped in 225/30x20 Nankang rubber

PCD Fitment Guide

Of course we couldn't list every single car in the history of the universe, we just don't have the pages, but here's the majority of the scene's core motors (and a few wacky OEM+ options).



Make	Model	PCD	Centrebore
Alfa Romeo	159 (2005 -)	5x110	65.1
	166 (1998 - 2007)	5x108	58.1
Aston Martin	Vantage	5x114.3	68.1
Audi	A1 (2010 -)	5x100	57.1
	A3 (8L 1996 - 2003)	5x100	57.1
	A3 (8P 2003 -)	5x112	57.1
	A4 (8E 2000 - 2004)	5x112	57.1
	A4 (B8 2007 -)	5x112	66.6
	A6 (1999 - 2011)	5x112	57.1
	A6 (2011 -)	5x112	66.6
	A8 (4E 2002 - 2010)	5x112	57.1
	A8 (4H 2010 -)	5x112	66.6
	RS6 (4B 2002 - 2004)	5x112	57.1
	S3 (1999 - 2003)	5x100	57.1
	S3 (2006 -)	5x112	57.1
	S4 (1994 - 2001)	5x112	57.1
	TT 8J (2007 -)	5x112	57.1
	TT 8N (2003 - 2007)	5x100	57.1
Bentley	Continental GT	5x112	57.1
BMW	1 Series (2004 -)	5x120	72.6
	3 Series E30 (1982 - 1990)	4x100	57.1
	3 Series E36 - F30 (1990 -)	5x120	72.6
	5 Series E28, E34 (1985 - 1995)	5x120	72.6
	5 Series E39 (1995 - 2003)	5x120	74.1
	5 Series E60 - F11 (2003 -)	5x120	72.6
	6 Series (1976 -)	5x120	72.6
	7 Series (1977 -)	5x120	72.6
	Z3 (1996 - 2003)	5x120	72.6
	Z4 (2002 -)	5x120	72.6
Citroen	AX (4 stud)	4x108	65.1
	C1	4x100	54.1
	C2	4x108	65.1
	C3	4x108	65.1
	C4	4x108	65.1
	DS3	4x108	65.1
	Saxo	4x108	65.1
Chevrolet	Corvette C4	5x120.5	70.5
Ford	Escort RS Cosworth	4x108	63.3
	Fiesta (all)	4x108	63.3
	Focus (1998 - 2004)	4x108	63.3
	Focus (2004 -)	5x108	63.3
	Focus RS (2009 -)	5x108	63.3
	Ka (1996 - 2008)	4x108	63.3
	Mondeo (1993 - 2000)	4x108	63.3
	Mondeo (2000 -)	5x108	63.3
	Puma (1997 - 2001)	4x108	63.3
	Sierra Cosworth (1990 - 1992)	4x108	63.4
	StreetKa (2003 - 2006)	4x108	63.3
Ferrari	355	5x108	67

Fiat	Punto (1993 -)	4x98	58.1
	Coupe (1993 - 2000)	4x98	58.1
	Bravo (1995 -)	4x98	58.1
Honda	Accord (2003 -)	5x114.3	64.1
	CRX (1984 - 2000)	4x100	56.1
	Civic (1983 to 2006)	4x100	56.1
	Civic (from 2006)	5x114.3	64.1
	Civic Type R (All)	5x114.3	64.1
	Integra Type R	5x114.3	64.1
	Jazz	4x100	56.1
	S2000	5x114.3	64.1
Infiniti	G35 (2003 - 2007)	5x114.3	66.1
Land Rover	Freelander (1998 - 2006)	5x114.3	64.1
	Freelander II (2006 -)	5x108	63.4
	Range Rover II P38 (1995 - 2002)	5x120	70.1
	Range Rover Sport (2005 -)	5x120	72.6
	Range Rover Evoque	5x108	63.4
Lexus	GS 300/430	5x114.3	60.1
	IS 200	5x114.3	60.1
	LS 400/430	5x114.3	60.1
	LS460/600	5x120	60.1
Lotus	Elise S2 (Front 2002 -)	4x100	56.6
Maserati	Grand Sport	5x108	67.1
Mazda	RX-7	5x114.3	59.6
	RX-8	5x114.3	67.1
	MX-5 (1990 - 2005)	4x100	54.1
	MX-5 (2005 -)	5x114.3	67.1
Maybach	62S	5x112	66.6
Mercedes	190	5x112	66.6
	A-Class (all)	5x112	66.6
	C63 AMG	5x112	66.6
	C-Class (all)	5x112	66.6
	CL	5x112	66.6
	CLC	5x112	66.6
	CLK	5x112	66.6
	CLS	5x112	66.6
	E63 AMG	5x112	66.6
	E-Class (all)	5x112	66.6
MG	ZR	4x100	56.1
	ZS	4x100	56.1
	ZT	5x100	56.1
Mini (New)	Cooper (all)	4x100	56.1
	One (all)	4x100	56.1
Mitsubishi	Lancer Evo I, 2, 3	4x114.3	67.1
	Lancer Evo, 4, 5, 6, 7, 8, 9, 10	5x114.3	67.1
	Colt (1992 - 2004)	4x100	56.1
	FTO	5x114	67.1
Nissan	200SX S12, S13	4x114.3	66.1
	200SX S14, S15	5x114.3	66.1
	300ZX Z31/Z32 (1989 - 1992)	5x114.3	66.1

	350Z (2002 - 2009)	5x114.3	66.1
	370Z (2009 -)	5x114.3	66.1
	GT-R (2008 -)	5x114.3	66.1
	Juke (2010 -)	5x114.3	66.1
	Micra (1993 - 2003)	4x100	59.1
	Micra (2010 -)	4x100	60.1
	Skyline R32 (GTS only)	4x114.3	66.1
	Skyline R32, R33, R34 (1989 - 2002)	5x114.3	66.1
	Sunny (1991 - 1995)	4x100	59.1
Peugeot	106 (4 stud 1992 - 2005)	4x108	65.1
	107 (2005 -)	4x100	54.1
	205 (1986 - 1996)	4x108	65.1
	206 (1998 - 2009)	4x108	65.1
	207 (2006 -)	4x108	65.1
	207CC (2007 -)	4x108	65.1
	306 (1993 - 2001)	4x108	65.1
	307 (2001 - 2009)	4x108	65.1
	406 (1995 - 2004)	4x108	65.1
	406 Coupe (1996 - 2005)	4x108	65.1
Porsche	911 (993, 996, 997 all GT)	5x130	71.6
	924 (1976 - 1987)	4x108	57.1
	928 (1978 - 1995)	5x130	71.6
	944 (1987 - 1991)	5x130	71.6
	Boxster (1996 -)	5x130	71.6
	Cayenne (2002 -)	5x130	71.6
	Cayman (2004 -)	5x130	71.6
	Panamera (2009 -)	5x130	71.6
Renault	Clio (1990 -)	4x100	60.1
	Clio V6	5x108	60.1
	Megane (1996 - 2008)	4x100	60.1
	Megane 3 from 2008	5x114.3	66.1
	Megane 225 Sport	5x108	60.1
	Twingo	4x100	60.1
SEAT	Arosa	4x100	57.1
	Ibiza 2002 to 2008	5x100	57.1
	Ibiza from 2008	5x100	57.1
	Ibiza (4 stud)	4x100	57.1
	Leon from 2005	5x112	57.1
	Leon to 2005	5x100	57.1
Skoda	Fabia	5x100	57.1
	Octavia (from 2005)	5x112	57.1
	Octavia (to 2005)	5x100	57.1
	Superb	5x112	57.1
Subaru	Impreza	5x100	56.1
	Impreza STI, WRX (1993-04)	5x100	56.1
	Impreza STI (2005-)	5x114.3	56.1
Suzuki	Swift (from 2005)	4x100	54.1
	Swift Sport 2006	5x114.3	60.1
	Wagon R	4x100	54.1
Toyota	Celica (to 1999)	5x100	54.1
	Corolla (1987 - 2007)	4x100	54.1
	Corolla (2007 -)	5x114.3	60.1
	MR2 (from 2001)	4x100	54.1
	MR2 (to 2001)	5x114.3	60.1
	Yaris (all)	4x100	54.1
	GT86	5x100	56.1
	Supra 1, 2	5x114.3	60.1

Vauxhall	Astra F, G (1991 - 2004) 4 stud	4x100	56.5
	Astra G, 5 stud (1998 - 2004)	5x110	65.1
	Astra H (2004 - 2009)	4x100	56.6
	Astra H 5 stud (2004 - 2009)	5x110	65.1
	Calibra	4x100	56.5
	Calibra (V6 Turbo)	5x110	65.1
	Corsa B, C, D (1993 -) 4 stud	4x100	56.6
	Corsa C, D (2000 -) 5 stud	5x110	65.1
	Insignia (2008 -)	5x120	67.1
	Nova A (1982 - 1993)	4x100	56.6
	Vectra A, B, C (5 stud)	5x110	65.1
	Vectra A, B (4 stud)	4x100	56.6
Volkswagen	Amarok (2010 -)	5x120	65.1
	Bora (1998 -2005)	5x100	57.1
	Caddy (1996 - 2003)	4x100	57.1
	Corrado (1988 - 1996)	4x100	57.1
	Corrado VR6 (1991 - 1996)	5x100	57.1
	EOS (2006 -)	5x112	57.1
	Fox (2005 -)	5x100	57.1
	Golf 1, 2, 3 (1979 - 1997)	4x100	57.1
	Golf 3 GTI/VR6 (1991 - 1997)	5x100	57.1
	Golf 4 (1997 - 2004)	5x100	57.1
	Golf 5, 6 (2003 -)	5x112	57.1
	Jetta (1985 - 1991)	4x100	57.1
	Jetta (2005 -)	5x112	57.1
	Lupo (1998 - 2005)	4x100	57.1
	New Beetle (1998 -)	5x100	57.1
	Passat (1983 - 1996)	4x100	57.1
	Passat B5, B6, B7, CC (1996 -)	5x112	57.1
	Phaeton (2002 -)	5x112	57.1
	Polo (1994 - 2001)	4x100	57.1
	Polo (2001 -)	5x100	57.1
	Scirocco II (1981 - 1992)	4x100	57.1
	Scirocco III (2008 -)	5x112	57.1
	Touareg (2002 -) diesel	5x130	57.1
	Touareg VR5 TDI (2002 - 2010)	5x120	65.1
	Transporter T4	5x112	57.1
	Transporter T5 (2003 -)	5x120	65.1
	Vento (1992 - 1998)	4x100	57.1
	Vento VR6 (1995 - 1998)	5x100	57.1
Volvo	340	4x100	52.1
	C30 (2006 -)	5x108	63.4
	C70 (1998 - 2006)	5x108	65.1
	S60R (2003 - 2010)	5x108	65.1
	S70 (1997 - 2000)	5x108	65.1
	S80 (1998 - 2006)	5x108	65.1
	V70 (2007 -)	5x108	63.4



arse end

Quotes of the Month



Jules discussing cover lines with Midge:
Jules: "What about Sensational SEAT?"
Midge: "No because sensational doesn't begin with an S."



Midge: "What's for lunch then?"
Initial G: "You can have this."
Midge: "I can't eat that, I'm allergic to bananas."



EC Phone Hack of the Month

New project Jules? (Damn auto correct - Jules)



VW TARDIS?

Midge's answer to everything is always 'buy a Golf'. Need to ferry the kids about? Buy a Golf. Want to take a fridge to the tip? Buy a Golf. Going over to France to smuggle a load of cheap fags and eight or nine illegal immigrants into the UK? Buy a Golf.

That said, he could be right because we've never seen anyone manage to cram a boot full of shopping, their mum, a pet border collie and a whacking-great TV in a modified Mk4 before, and that's without even putting the seats down! Or how about a whole Ikea sofa bed, full length mirror and living room lampshade?

Need to fill your motor with a whole load of shite that's worth more than the car in the first place? Buy a Golf.



SLIM FAST

Looks like the big man's diet is going well eh? Here's his recipe of the month which proves he's like some sort of anti Jamie Oliver. Take a full pound of minced beef, wrap it around a couple of Mini Babybels (yes, you read that right) and bosh together some cracking homemade burgers. Fry the patties and chuck 'em in a couple of large rolls with loads of cheese, bacon and a little bit of salad (to make you feel better), and that's breakfast sorted. Christ alive! Which is more than he'll be if he carries on like this.



WHAT THE?

Every week, while he's supposed to be working, Initial G sends us random grabs of his achievements for the day. Obviously we haven't got the heart to ask what the chuff he's going on about. If anyone can actually explain this lot feel free to get in touch. We don't know whether to pat him on the back or send him a sympathy card.

TOP 5 VIDEOS

CHECK OUT MORE ON WWW.FASTCAR.CO.UK



EUROPEAN TUNING SHOWDOWN 2015

It's the fourth annual Tuning Showdown at the Tuningworld Bodensee 2015, presenting some of the craziest motors you'll ever see. Including a Lambo-powered Fiat 500? Christ.

www.fastcar.co.uk/2015/07/16/european-tuning-showdown-2015



TUG OF WAR

Nothing quite sorts the men from the boys like a good old fashioned tug of war. So, with that in mind, let's see Chris Forsberg and Ryan Tuerck go at it Hoonigan style! Let battle commence... www.fastcar.co.uk/2015/08/06/chris-forsberg-vs-ryan-tuerck-car-tug-of-war



USC 2015

We've always said that USC has to be one of the most bonkers events in the UK. Here's the official video that proves it. Hit play and enjoy the carnage people!
www.fastcar.co.uk/2015/08/07/ultimate-street-car-2015-video



JDM YO

It's one thing loving everything about Japanese culture and eating nothing but sushi and wasabi coated nuts, but it's entirely another when your whisky has to be JDM too. G, we think you may have a problem – this is worse than when you thought you were a ninja.



BORN SUPERSTAR

Check out our Jules muscling his way in on the end of this year's TRAX video. That's almost guaranteed to stop it going viral right! You'd better view the video (see below) just to humour the big buffoon!



TRAX 2015

We brought you our TRAX Special last month and very good it was too, even if we do say so ourselves. Here's a nice little look back at the action, via the medium of moving pictures. <http://www.fastcar.co.uk/2015/08/05/trax-2015-video/>



FASHION KING

You know how we always say our Jules has the most questionable taste in clothing ever? Well, we take it all back. Even the Eric Cantona collar is forgiven son!



ADVERTISING WORKS

Have any of you Southerners heard the annoying Dart Charge radio advert? You know, the one with that woman saying, since they've taken away the barriers, "there's no more queuing at the Dartford Tunnel?" Well, best not talk to our sensitive Midge about it. Here he is about six miles away at 2pm last Monday afternoon. To be fair, he's probably still there now.



NIGHT OF WHEELS

We'd not heard of this Austria meet before but we want to go now! It's easily as good as Night at the Museum, because all the wheels come alive after midnight. ... That's a lie, but it is good. www.fastcar.co.uk/2015/07/28/night-of-wheels-2015

Midge's DIY TIPS

Hacks, tips and all round useful bits!



Carabina

It's weird eh? When you're hunting around your boot or toolbox for a specific spanner you can never find the one you want because they're strewn all over the place, especially when you're at the side of the road and in a hurry. Well, here's a top tip someone gave me the other day. Get yourself a cheap carabina, string all your spanners through it and that way they'll always be together, in order, and ready for action – even if you tend to drive like Richard Burns with a wasp in the cabin.

Makes good sense this one – I've even started doing it myself!

SO WHAT??

PRESS RELEASES WE REALLY DON'T CARE ABOUT THIS MONTH...



Pagani Automobili today announced the appointment of real-time 3D visualisation specialist ZeroLight, as provider of Pagani's next generation digital retail technology, which is set to enhance the way its cars are demonstrated, specified and purchased. **Yeah because you really need help in wanting one – a discount would be better.**

Nissan are at the 2015 Frankfurt Motorshow and look forward to seeing you all at the show. **I doubt it fellas. Probably because the show's in Frankfurt.**

The all new Baleno, an ideal hatchback from compact car expert Suzuki is set to make its world premiere at the 66th IAA Frankfurt

Motor Show.* The debut of the full production version follows on from the iK-2 Concept seen at the Geneva Motor Show earlier this year. **We liked the old 1990s Baleno. It was a hot hatch. This one's... well, my mum likes it, and that's not good.** This week Nokia announced an agreement to sell HERE to a consortium of leading automotive companies, comprising AUDI AG, BMW Group and Daimler AG. **Great.**

Two hydrogen pioneers have taken real-world zero-emission motoring to a new level by driving a Hyundai ix35 Fuel Cell 2,383 kilometres in 24 hours. **That's a 'tyre-destroying' average of 61mph. I'm guessing it wasn't on the M25.** The commercial vehicle market's record performance in the first half of the year has been followed by a more sedate July, underpinned by a slight fall in van registrations, "

said Mike Hawes, SMMT Chief Executive. **Cheers Mike, thanks for pointing that one out.** The four leading trade bodies that represent the UK logistics industry have pledged to work together to improve the industry's public image and attract more staff. **Improve the image? Of lorry drivers? Really? But we love them so much already.** Renault UK will serve up a tasty treat for foodies, music lovers and families this summer as it comes back for second helpings as the official automotive partner of Jamie Oliver and Alex James' Big Festival. **Food and Renaults. They go together just like peaches and, erm, steak.** The Lexus Hoverboard has taken flight, a feat captured in Slide, a new film recording the success of the latest project in Lexus's Amazing in Motion campaign. **Doc Brown, eat your heart out!**

Next Month* in Fast Car it's the...

Heels and Wheels Special!

Car culture isn't just for boys; we take a look at some of the best 'girls' cars' on the planet!



HOT RIDES:

Plush Golf GTi
Epic E21
Gorgeous Glanza
Mental Merc
Naughty Nissans

SHOWS:

RETRO RIDES GATHERING

We pop along to the best old skool event of the year

JAPFEST 2

It's a bit like Japfest but in August and at Rockingham Motor Speedway

PLUS:

Product tests, Fast Projects, tech guides and loads more



*Subject to change, because that's how we roll.

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6x9" Coaxial	£35.99	£39.99	£63.99	£74.99
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6.5" Component	£35.99	£39.99	£55.99	£119.99

FLI Underground
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1000W - FU12A £79.99



FLI Trap
1000W - FT10A £105.99
1200W - FT12A £109.99



EDGE
700W - EDB10A £74.99
900W - EDB12A £79.99



Vibe Slick
1200W - SLR12A £134.99
12400W SLR12TA - £229.99



Vibe Black Death
1800W - CBR12 £199.99
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18

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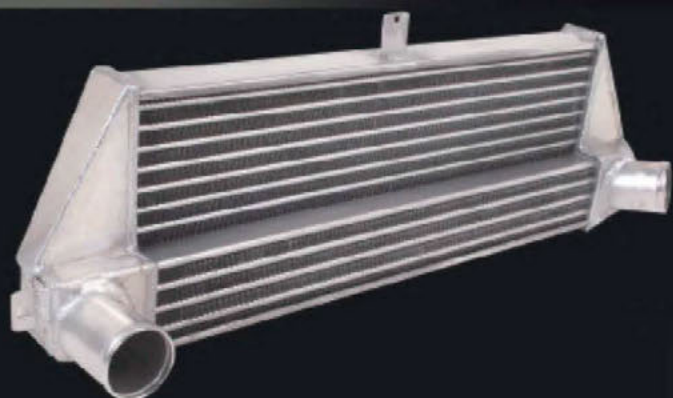


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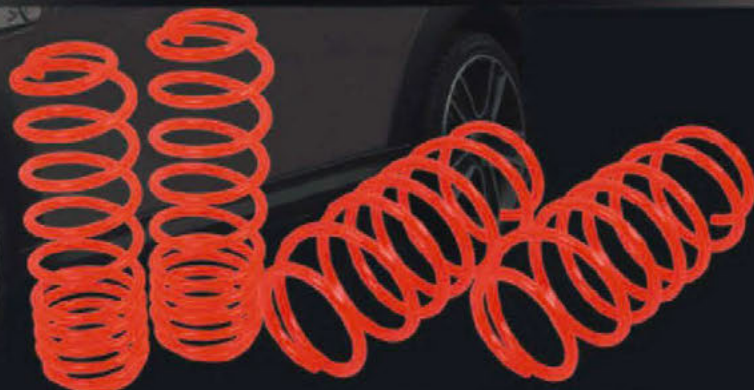
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